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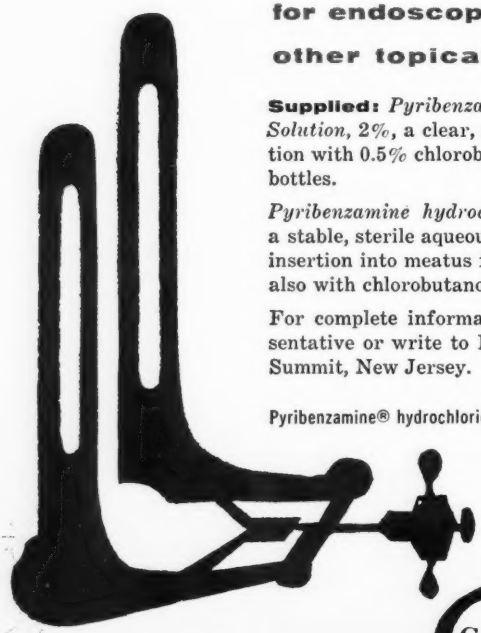

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As a special "bonus" to our readers, the Editors will increase the feature content of the next several issues. Of course, this will necessitate temporarily eliminating other editorial content, such as the Ambulatory Proctology section and the Atlas of Proctology. These sections will be resumed in subsequent issues.

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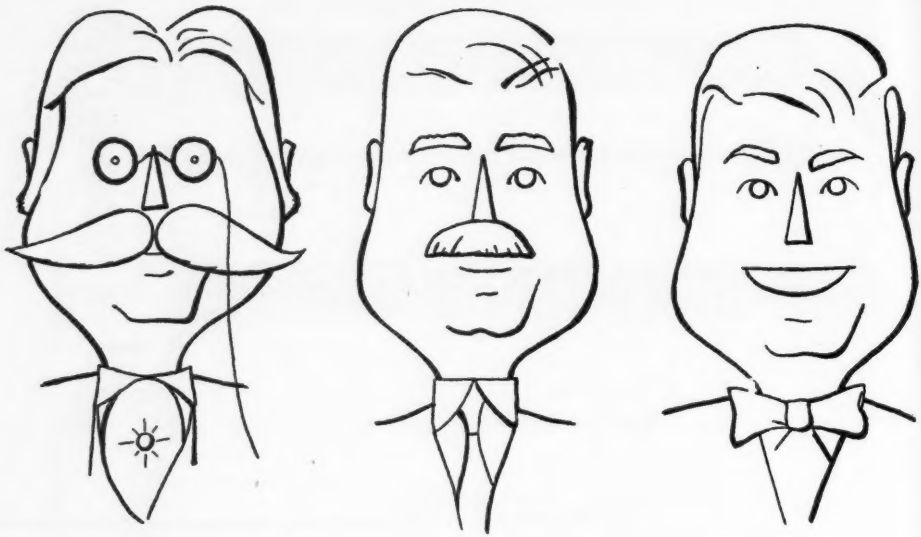

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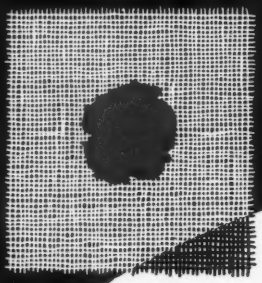

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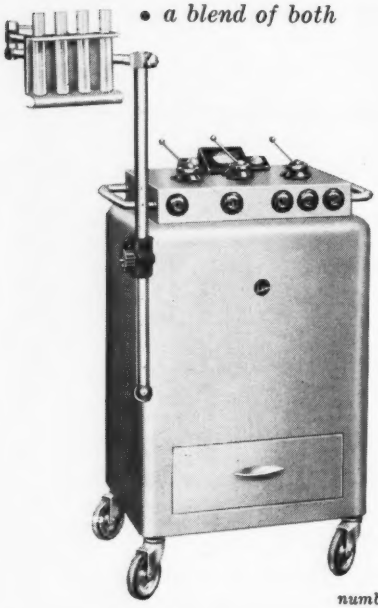

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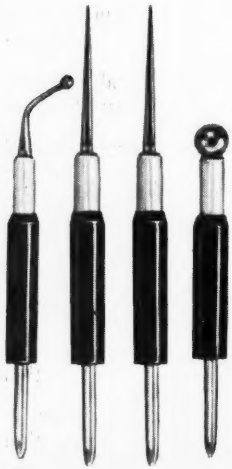

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Peyton Method for Electrosurgical Hemorrhoidectomy

THOMAS ROY PEYTON, M.D.
Los Angeles, California

In past years there have been numerous surgical procedures offered for hemorrhoidectomy. The Whitehead operation which excised most or all of the anal epithelial lining, with subsequent severe pain and stricture, is now obsolete. The Clamp and Cautery method has also been discarded by most modern surgeons. Lately, there have been numerous ligature and suturing techniques with the generous use of catgut. Catgut is unreliable when knotted under tension, and is the source of wound infection as well as allergic tissue reaction. Edema, inflammation and abscess formation have been noted after its use in abdominal surgery and elsewhere. Linen, as suture material, causes less reaction and more satisfactory healing. Occasionally, one may also find an advocate of the Dessicating and Galvanic current techniques, which are not definite in application and are likely to destroy considerable normal tissue.

It should be understood that almost everyone over twenty years of age has hemorrhoids. The important thing is to ascertain discriminately, the indication for removal. The patient examined without anesthesia in the office is usually tense. Examination is resented by certain muscles which are brought into play. This negates an absolutely conclusive picture from the pathologist's point of view. Hence, diagnosis under anesthesia is important and most significant in the relaxed state. The diagnosis should be arrived at with as little distortion as possible for an unbiased decision.

Obviously, the various ano-rectal patterns that may be encountered are many. Basically, however, the three primary hemorrhoids may be noted with rather constant regularity as, in the left lateral, right anterior and right posterior quadrants. There are often associated pathological conditions such as papillae, ulcers or prolapsed rectal mucosa. Hemorrhoids should be differentiated from hypertrophied anal papillae, adenoma, mucous prolapse, procidentia, carcinoma, squamous cell

carcinoma, villous papilloma and lymphogranuloma venereum.

This is to present a simplified and exacting technique for the surgical removal of hemorrhoids with electro-surgery, dealing minutely with the pathology in question, and leaving as much of the normal pattern of the anal lining as is possible. This technique is dedicated to those many who may be far removed from the proctologist, yet must frequently attempt surgery. We believe that electro-surgery, with the fine adjustments now available, offers excellent opportunity for delicate operations with meticulous precision, especially in highly vascular areas such as the anus. Experiences during the past five years cover exactly 381 cases to January 15, 1955, with uniformly satisfactory results, and serves to substantiate the claims made for electro-surgery. This simple and easily accomplished technique is suggested for use by any doctor who has a working knowledge of the anatomy and pathology of the anorectum.

As a rule the external hemorrhoids are involved in relation to the corresponding internal hemorrhoids, necessitating interruption of the former circulation as well as excising the associated internal hemorrhoids. Hence the operation consists of excision of the internal and associated external hemorrhoids, followed by the engagement of a single stout linen ligature, including adequate excision of the anal and perianal skin for drainage. The pedicle for the ligature should not be too large, as it may predispose to post-operative polyp. Three ligatures, one for each quadrant, should suffice.

The current is adjusted so that there is considerable coagulation with the cutting current. Thus, the field is not obscured by excessive bleeding. Only rarely are small persistent bleeders ligated separately. I employ the #799-H Birtcher electro-surgical unit with the spark-gap set at number six position and the tube-cutting current at number one position. (These positions can be fixed only with this specific model and will vary slightly with different models of the same manufacture and with electrosurgical machines of another make. Each operator need arrive at these qualities of currents by experiment.)

The fine needle point electrode I employ is the Birtcher #716 Needle which has a diameter of 20/1000 of an inch and is 5/8 of an inch long, extruding from the insulated shank. It is fitted into the Birtcher #711-E light weight handle and cord, permitting delicate handling for intimate incisions made at vulnerable areas. Care should be maintained not to over-coagulate tissues, especially those deep in the anal canal or associated with the sphincter muscles. The fine needle point permits the use of

Fig. 1. Appearance of anus before surgery.

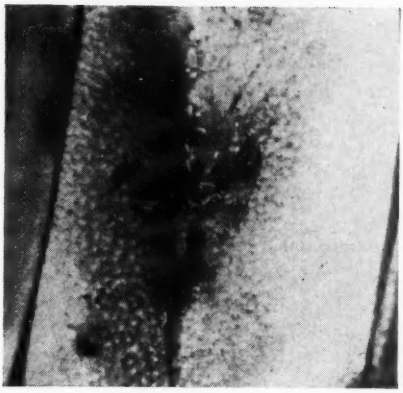


Fig. 2. Appearance of anus at completion of surgery.

the spark-gap as selected by the "Gap pedal" of the footswitch for controlled incisions with coagulation, especially in the subcutaneous tissues and the modified skin of the anal canal. The "Blend pedal," which mixes together simultaneously the cutting current and the spark-gap coagulation current, allows for a more decisive incision of the more resistant true skin or certain fibrosed areas with the same power levels, as mentioned above, on the machine. For coagulation of the perianal wound to control oozing and to prevent too early healing, I use a #795-A ball-type electrode which measures 7/32 of an inch in diameter, in order to cause a light coagulum of this wider surface. Frequently the coagulum tends to adhere to the needle, making it necessary to cleanse the needle with sterile copper wool.

The operator may use his preference for anesthesia. My experience during the past five years with a low, lateral spinal approach, using the minimal amount of fifty milligrams of novocain crystals, has been adequate, permitting forty-five minutes plus of operating time. Operating time is normally fifteen to thirty minutes depending upon the severity of the case.

Technique The bowel is prepared by the usual cleansing enemata. Sigmoidoscopy may be done before or after anesthesia as desired. Under anesthesia, after finger examination of the anal canal and lower rectum, and modest adjustment of adhesive strips to the buttocks for better exposure, a medium sized speculum (circular and not bevelled) is inserted to isolate and identify the hemorrhoids or other pathology to be removed. No further dilatation is needed than that provided by the 'scope. On occasions the pecten band may require division before introduction of the 'scope. The hemorrhoids, as identified, are grasped with curved hemostats and brought gently outside the anus. A straight hemostat is applied to the related perianal skin with gentle traction. An intervening, delicate triangle incision through the perianal and anal skin lining is made down to the inter-muscular septum, which usually

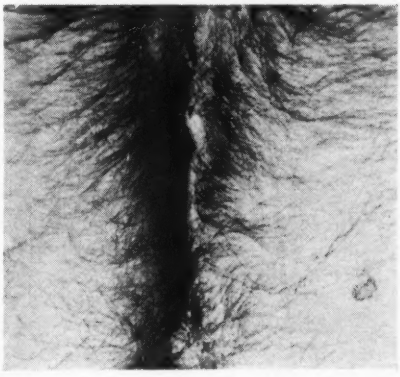


Fig. 3. Appearance of anus when healed.

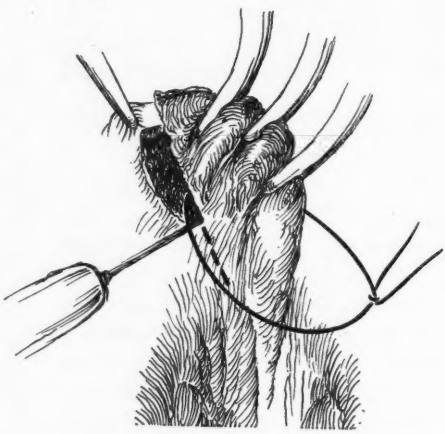
exposes some fibres of the subcutaneous external sphincter muscle. A stout linen ligature is placed in the bed of this wound and brought around to include all of the hemorrhoids to be excised, and drawn VERY TIGHT with the knot on the lumen. It should be remembered that if, as is often the case, there is considerable prolapsed rectal mucosa associated, this may be included in the ligature, depending upon the redundancy of the particular quadrant. This tends to leave the ligated stumps at various levels in the ano-rectal area, which is

Schematic Design of Electro-Surgical Technique

a.

Hemorrhoids brought outside the anus.

b.

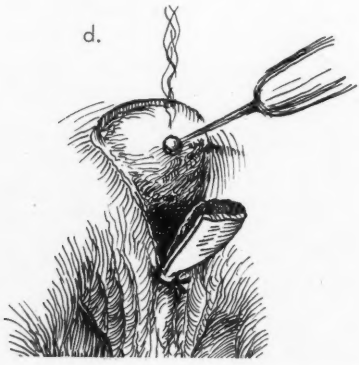


Electro-surgical needle causing incision. Ligature in situ.

c.

Ligature knot on the lumen — stump above.

d.



Electro-surgical ball point to coagulate perianal wound.

desirable as it prevents undue stenosis. Extreme gentleness and care should characterize the handling of tissues with as little tension, torsion or pulling out of relation as possible. The lid of the hemorrhoidal mass is excised with curved scissors, leaving considerable stump to prevent slipping of the ligature. In extremely involved cases a two stage procedure may be advisable. Moist gauze inserts are laid in the wound quadrant and tucked into the anal canal for fixation—an aid to hemostasis.

Each subsequent quadrant is treated similarly. Débridement, with adequate skin drainage is effected, and the area exposed thinly coagulated with the ball point electrode for the twofold purpose of (1) delayed healing of the external wound, and (2) control of oozing at the site. Two finger dilatation of the anal canal insures sufficient room, and this must be done with care, inserting one finger at a time so as not to dislodge the ligatures in situ. A narrow strip of sterile vaseline gauze or gauze saturated with sulfa ointment is gently inserted into the canal, and the optional wick of oxycel gauze tucked into each quadrant to further negate post-operative bleeding. Pressure is applied with fluffed gauze and pads, depending upon the contour of the buttocks. Wide adhesive strips are placed over the buttocks, trochanter to trochanter, for splinting, and T binder applied.

Post-Operative Care The adhesive tape is removed in ten to twenty hours, followed by hot sitz baths. The vaseline gauze is gently removed in twenty-four to thirty-six hours and the wound dressed. On the morning of the second post-operative day three or four ounces of warm olive oil is introduced into the rectum through a no. 18 catheter, which is left in the anal canal for comfort of the patient, as, fifteen or twenty minutes later one pint of saline solution is introduced through the same catheter. The patient may leave the hospital late on the morning of the second post-operative day, after the enema.

Subsequent digital examinations are made on the fifth post-operative day and every fourth day thereafter until healed. The patient is instructed to use pledgets of cotton moistened with witch hazel for cleansing after B.M., leaving a small wisp of cotton at the site to maintain cleanliness of the wound.

Summary

This technique has the following advantages:

1. Minimal bleeding.

2. No undue stretching or distortion of the part, and therefore little or no post-operative pain or edema.

3. Minimal or no suturing with catgut.

4. Ease and speed of operation, requiring minimal anesthesia and one scrub nurse as assistant.

5. Delayed healing caused by coagulated tissue at drainage wound. This allows for complete inner-wound healing and prevents bridging over of prematurely healed skin.

6. The ligature, which may not completely slough away until the tenth or twelfth day, depending upon the thickness of the pedicle

ligated, leaves a more accommodating anal canal with better function, more elasticity, and with little or no morbidity.

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Surgical Management of Segmental Diverticulitis*

GEORGE M. BROWN, JR., M.D., F.A.C.S.**
McAlester, Oklahoma

Progressively advancing patient age is rapidly making segmental diverticulitis a problem of primary importance. Surveys of large institutions reveal practically no cases of diverticulosis below the age of 35. In recent years, however, there has been a progressive and steep rise in incidence concomitant with the rise in patient age. Diverticulosis is present in about 60 to 70 per cent of patients above the age of 70. Of these, 30 to 40 per cent will develop acute diverticulitis.

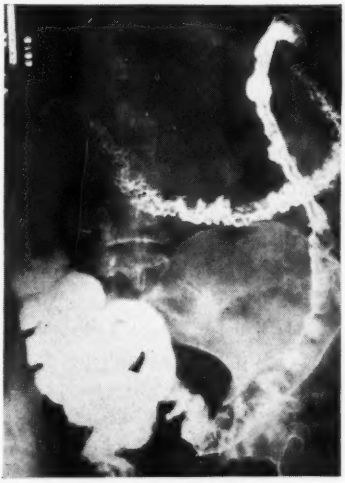

Fig. 1. Perforation with abscess formation and peri-sigmoid fistula.

Treatment of segmental diverticulitis has undergone radical change in the past decade. The trend, though largely medical in the past, has changed because of present day antibiotics, improved surgical techniques, marked impovement in pre- and post-operative care, and an overall general lowered mortality and morbidity rate. Surgical intervention previously was used only for one of the complications of diverticulitis. These, in the order of their importance, are:

Perforation, with or without fistula formation.
Obstruction.
Hemorrhage.
Inability to exclude concurrent malignancy.
Intractability to medical treatment.

1. Perforation undoubtedly occurs frequently, with a localized peri-sigmoid fistula becoming walled off. Following conservative therapy, these occasionally drain spontaneously into the bowel.

* Presented at the Seventh Annual Teaching Seminar, International Academy of Proctology, New York City, 1955.
** Department of Surgery and Proctology, McAlester Clinic, McAlester, Oklahoma.

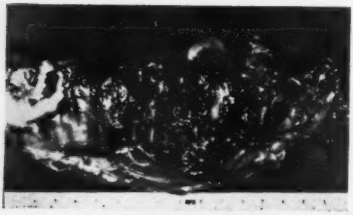

Fig. 2. Shows massive peri-sigmoid inflammatory reaction over serosal surfaces.

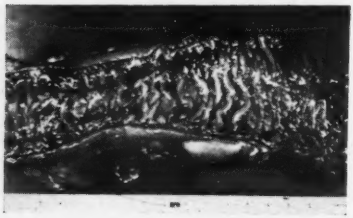

Fig. 3. Reveals marked thickening of the muscularis coats with an unchanged mucosal surface.

Fig. 5. Shows fistula formation with almost complete large bowel obstruction with marked distention of proximal colon.

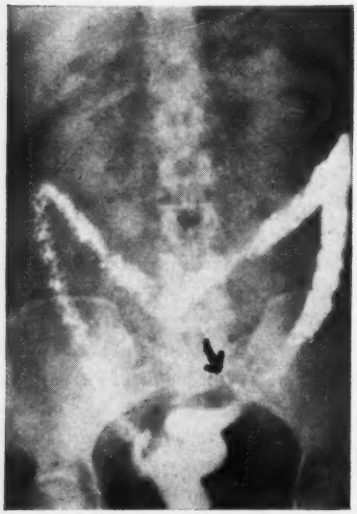

Fig. 4. Postoperative barium enema with anastomosis marked by silver clips.

Perforation with fistula formation, however, continues to be the primary motivating factor for surgical intervention. Particularly is this so when the fistulous communication is between the bowel and the bladder, or between the bowel and the skin.

II. Obstruction associated with segmental diverticulitis seldom manifests itself as an acute, complete, large bowel obstruction. The distention of the proximal colon, usually produced slowly and over a long period of time, still adds greatly to the technical difficulty of any type of primary anastomosis.

III. Bleeding was thought to be present in only about ten to fifteen per cent of the cases of diverticulitis. Further study of this disease indicates that the percentage is much higher. Hem-

President's Page

EMOTIONAL ASPECTS OF PROCTOLOGY PATIENTS

". . . the patient's attitude toward his situation was a more important influence than the actual situation," stated King and Leach in their study of patients who delayed seeking medical care in the face of symptoms which might indicate cancer.[1] The truth of this has been indicated often and, as proctologists, we recognize it daily. It is the rare patient who appears voluntarily for "routine" or periodical examination; most frequently only severe discomfort, or even pain of some long standing, brings in the people we see. We also have to deal with a type of nervousness resulting in physical tensions that makes examination more difficult than it need be. Indeed, of necessity, the emotional factors of our patients are as much part of our concern as the purely physical aspects of their ailments.

It is interesting to remember that Freud, pioneer of the shadowy world of feelings, was a physiologist. The physical revelation of emotional conflict was his key to the inner life.[2] In the case of ulcerative colitis we use understandings he sparked, along with our prescriptions for surgery, diet, and medications. Other colo-proctologic illnesses, since they, too, are deeply involved in emotional problems, are indications for a combination of approaches, though their etiology may be less dramatically obvious.

From infancy the gastrointestinal tract is the focus of emotions as well as the means to nourishment and the disposer of waste. As the baby develops and increasingly, with his growth, is expected to give as well as receive, he utilizes the tract and its products to express anger, fear, and rebellion. Because his desires for warmth, acceptance, love, and his primitive enjoyment of pleasure when left alone, differ sharply from his parents' attitudes and requirements in their wish to civilize him, conflicts develop.

In what Freud called the *anal period* these conflicts may assume life-long importance.[3] As we know, many people fail to resolve them in the suitable period, and hangovers of these conflicts in unconscious form can greatly influence onset, prognosis and behavior of the patients we treat.

The patient who resists medical help for rectal difficulties, the patient whose nervousness or excessive modesty impedes anal examination, are reflecting early parental viewpoints. These unfortunate people were made to feel that the lower part of the gastrointestinal tract and its products of flatus and fecal material were dirty, shameful and wrong, and that persisting in their natural attitudes would result in disaster. Through physical pain (spankings) or psychic pain (scolding,

anger on the part of the parents, withdrawal of love, etc.) these people were forced to give up—or repress—their pleasure feelings. Sometimes feelings of guilt accompanied attempts to adapt to parental requirements.

Usually recognition of the underlying emotional problems, along with a calm, unhurried, reassuring manner on the part of the physician, and an explanation of what is going to happen and what it will accomplish, will help to overcome the fears and guilt feelings persisting in such patients, which make proctologic techniques unnecessarily difficult or unpleasant.

As Hinsie has said, "The healthy parent helps the healthy child eventually to divest the alimentary tract of the infantile ratio of emotions to other channels—for example, to the building up of intelligence—but retaining enough in the tract for reasonable care and attention."[4] Patients who have had understanding treatment at the hands of their parents are liable to be what we term sensible and adult in the approach to proctologic illness.

When surgery may be indicated, we run head-on into other frightening emotions as well as the residues of the anal period. From slightly later times comes fear of mutilation to mix with whatever highly personal concepts of his body each individual has unconsciously, and the inevitable fear of pain itself. If proper preparation for surgery (in terms of reassurance and explanation) and plenty of opportunity for the patient to express his doubts and fears is *not* provided, the experience can be a damaging one, affecting not only the immediate prognosis, but the subsequent life pattern in its entirety. In dealing with cancer patients, or those whose symptoms postulate cancer and therefore radical surgery, the supportive role of the physician particularly must not be underestimated.

Problems of the emotional life, such as those mentioned above, account in large measure for the tendency of people to seek "quick," "sure," "painless" treatment at the hands of quacks, thus prolonging discomfort or pain, and sometimes delaying qualified medical therapy until constructive help may be all but impossible. The appeals to ignorance and feelings of dread that are apparent in the advertisements of quacks are clear indications of the emotional climate of much of the populace. One good way to combat their insidious and malign influence is to provide knowledge and wholesome attitudes for our patients and their families, while fighting quacks and their methods directly by every means that comes to hand.

In addition, we must keep before us always the problem of subterranean floods welling up from the unconscious to influence our patients. It is incumbent upon us to divert and dissipate these influences to prevent the mischief they can create on the physical plane and, when their work is already apparent, to allay its destructive effects.

LOUIS S. WEGRYN, M.D.

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orrhage further poses a problem of diagnosis, however, in ruling out concurrent disease other than diverticulitis that may be present throughout the gastrointestinal tract.

IV. Malignant Disease coexisting with diverticulitis needs great emphasis. Only 100 cases of diverticulitis with associated malignancy had been reported in the literature prior to 1952. The number has been almost doubled since 1952, and our own series shows a like increase. The primary difficulty is in establishing the diagnosis of two separate, associated diseases. One's awareness of the possibility of malignant disease in a known case of diverticulitis is often dulled. In many instances patients are continued under medical management for a long period of time with coexisting malignant disease present.

V. Intractability to Medical Treatment has a most important place in this discussion. Bed rest, sedation, stringent dieting and long usage of expensive medicine, present marked financial problems in maintaining good medical treatment for diverticulitis. Notwithstanding, these patients in many instances finally come to surgery as a last resort for treatment of associated complications.

Surgery in the above group of cases is necessitated, not as definitive treatment toward the primary disease, but rather as treatment for its complications. In many instances, multiple stage operations are necessary in the older age group of patients in whom operative risk is increased. Despite this fact, the operative mortality for surgical treatment of diverticulitis and its complications has been reduced from a previous reported 40 per cent to a present 3 per cent.

Fig. 6. Reveals minimal serosal changes despite severity of disease.

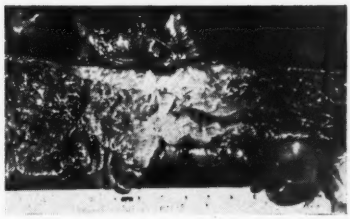

Fig. 7. Shows almost complete obliteration of lumen from scar and thickening of muscularis coats.

Fig. 8. Normal postoperative barium enema.

Fig. 9. Preoperative barium enema showing segmental diverticulitis. Length and involvement as determined by x-ray are no criteria for the potential severity of the hemorrhage.

With these facts in mind, one must now realize that segmental diverticulitis itself should be considered an indication for operative intervention. With all factors considered, both medically and economically, we suggest criteria for primary resection of the sigmoid colon with end to end anastomosis. The following groups of patients, being reasonably good surgical risks, fall into these criteria.

1. Intractability to medical management. In this group are those who continue to have tenesmus, bloating, diarrhea, cramping or weight loss despite continued good medical management.
2. Symptoms of diverticulitis under the age of 55. The age incidence has been recognized as most important. We feel that patients who develop symptoms at an early age will have progression of their disease and early development of complications.

Fig. 10. Normal postoperative barium enema with patient asymptomatic 22 months following surgery.

Fig. 11. Area in rectosigmoid showing zone of segmental diverticulitis with concurrent malignancy suspected.

3. Those who, by barium enema examination show marked radiological changes in the colon pattern. This change is undoubtedly due to structural damage of the bowel wall and not on the basis of spasm. These patients are in a pre-complication stage at the time of initial examination.
4. Intermittent rectal bleeding or passage of bloody mucus with no other demonstrable cause. Adequate proctoscopic examination and barium enemas with air contrast should be carried out to eliminate the possibility of polypi or malignancy. With such being absent, operative intervention should be considered initially, since symptoms will be progressive.
5. Those with urinary tract symptoms, especially in the male. Dysuria, frequency and a feeling of fullness in the bladder region may oftentimes be the first indication of an active segmental diverticulitis. Fistula formation may actually be taking place in the absence of other symptoms.
6. Coexistence of malignancy. This is often difficult to exclude. In many instances, preparation of the bowel for x-ray examination cannot be done satisfactorily. With improper preparation a definitive diagnosis cannot be established. Diverticulitis is not a precursor of malignancy, but concomitant incidence is high.

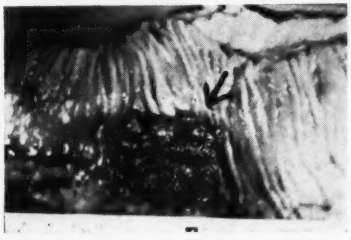

Fig. 12. Gross specimen showing large adenomatous polyp which has undergone malignant change.

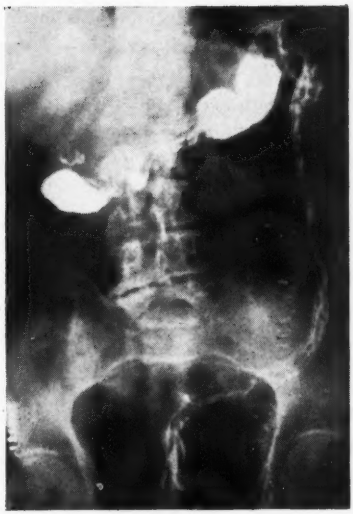

Fig. 13. Normal postoperative barium enema.

Bowel Preparation Preoperative preparation of the bowel has long been a fetish with most individuals doing colon surgery. With the advent of the broad spectrum antibiotics much change has occurred. We still feel that the best preparation is obtained using sulfasuxadine or sulfathaladine. These drugs are given in daily divided doses of 12 to 15 grams. Speedy preparation of the bowel is no major factor in this disease. These sulfa drugs produce adequate colon antisepsis in four to five days. A liquid colon content is produced and the flora of the intestinal tract is not disturbed to a point that heavy overgrowths of

yeast or monilia develop. This medication is supplemented with broad spectrum antibiotics 48 hours prior to surgery. Both the broad spectrum antibiotics and the sulfa drugs are continued for a period of 72 hours following surgery. A low residue diet is utilized both pre- and post-operatively, with mineral oil being used nightly for the first week following operation.

Surgical Technique With patients who are considered adequate operative risks, resection with primary anastomosis can be done in the majority of cases of segmental diverticulitis. A low, midline abdominal incision allows adequate mobilization of the sigmoid and left colon from the left gutter. A sufficiently long segment of the left colon can be brought down to establish a primary end to end anastomosis as deep in the pelvis as may be needed. A moderately wide excision of the mesocolon is advocated. This is necessary as perforation of a diverticulum may occur between the leaves of the mesocolon, forming undisclosed micro-abscesses in the mesocolon. Fistula formation is no contraindication to such a procedure, providing the associated inflammatory process is not extensive and diffuse. Where fistula formation is present between the bladder or between loops of small bowel, such tracts can be taken down. The communicating tracts in either the bowel or the bladder may then be closed primarily.

The length of the segment removed varies. This is determined both by the extent of involvement as revealed by x-ray examination, and by careful evaluation of the gross pathology of the involved segment of bowel. One should resect a segment long enough to establish normal bowel both proximally and

Fig. 14. Preoperative x-ray showing extensive involvement of rectosigmoid.

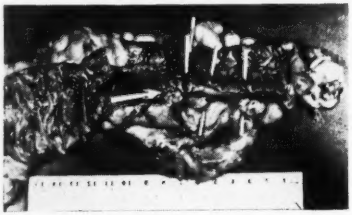

Fig. 15. Gross specimen showing thickened muscularis coats and multiplicity of impending perforation points.

Fig. 16. Normal postoperative barium enema.

distally at the site of anastomosis. If the splenic flexure of the left colon must be mobilized to increase the available length of the left colon, such can readily be attained by extending the midline incision. Many previously reported failures are undoubtedly due to ultraconservative resection.

Suture technique is a standard one-layer closure of all coats, using interrupted 00 atraumatic silk. All knots are tied on the inside of the bowel lumen. The mesocolon is closed in like manner. The left gutter and left pelvis are re-peritonealized where feasible.

In most instances, the line of anastomosis is well within reach of the sigmoidoscope from below. If distension above the suture line occurs, one can readily insert a small catheter past the line of anastomosis from below. Proximal decompression is rarely necessary, except in the individual in whom obstruction may be a complicating factor. When long standing obstruction is a prominent feature, a marked disparity in the size of the proximal and distal segments of the bowel is present. We feel that these cases are best dealt with by a two stage procedure. A proximal, transverse, diversionary colostomy is done, and when the obstructive manifestations are corrected, resection with primary anastomosis can be carried out with closure of the colostomy accomplished at the same time.

Over-all Results In the past three years, we have had over fifty cases of both benign and malignant disease in which resection of the sigmoid colon with primary end to end anastomosis has been done, utilizing the above technique. Of this group, fifteen have been for segmental sigmoid diverticulitis. There has been no operative mortality. The only cases having increased morbidity have been those in whom stage procedures have been necessary for treatment of complicating factors of diverticulitis.

Long term results must be evaluated as larger series are presented and evaluated over a ten year period. With the involved segment of bowel removed, however, and the dehydrating portion of the colon materially shortened, chronic constipation with inspissated feces will be greatly reduced. With such, the production of further diverticulitis will be maintained at a minimum, and the etiology of its complicating factors reduced.

Summary and Conclusion

1. Diverticulitis is a disease of advancing age and is increasing in incidence as the overall patient age increases.

2. Contrary to medical thinking of a decade ago, active surgical intervention as a primary line of attack in this disease must be considered from a mortality, morbidity and patient financial standpoint.

3. Early operation in these patients will avoid the development of complications, necessitating multiple operations and prolonged hospitalization.

4. Palliative treatment with diversionary colostomy alone is poor palliation at best.

5. Inability to exclude coexisting malignancy demands early operative intervention.

6. Primary resection with end to

end anastomosis on a patient, age 60, is far superior to multiple stage operations for complications on the same patient, age 70.

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Audio-Visual Seminar Kits

The International Academy of Proctology is pleased to cooperate with the University of Utah College of Medicine, Division of Graduate and Postgraduate Medical Education, in the distribution of their excellent Audio-Visual Seminar Kits. The Academy, of course, is particularly interested in their A-V Kit #6 on "Polypoid Lesions of the Colon and Rectum" by Dr. Ralph C. Richards, Assistant Professor of Surgery, University of Utah College of Medicine.

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The Division of Graduate and Postgraduate Medical Education is now in the process of preparing an additional kit dealing with Various Proctologic Lesions and Their Treatment. When this Kit is ready for distribution an announcement will appear in the American Journal of Proctology.

Pathologic Evaluation of Rectal Lesions

OSCAR B. HUNTER, JR., M.D.
Washington, D. C.

Much has accumulated in the literature on the subject of pathologic lesions of the rectum and colon. Description has been thorough of the lesions found and the character of the lesions that may be expected. The rare and unusual lesions have gained favor among the surgeons and pathologists contributing to the literature, while the day to day work has suffered because of its routine character. The pathologist in the general hospital daily sees many different lesions from the rectum and colon. They consist largely of benign polyps, and less frequently of actual invasive carcinomas.

The management of these lesions must always depend upon an accurate pathologic evaluation of the lesion. It is most important to the surgeon to know something of the precise character and extent of the tumor. If the pathologist is able to give the surgeon a concise evaluation of this particular aspect, he has performed his duty well. On the other hand if a curt diagnosis suffices, then the surgeon is left to his own devices to try to establish his approach to therapy on the gross pathologic examination, and thereafter establish further the ultimate prognosis in the patient. In our laboratories, the principle of allowing gross evaluations only to satisfy these needs is not entertained. Rather we feel a coordinated gross and microscopic pathologic evaluation should be the just due of the surgeon and the patient. We feel that our duty has not been completed until we have given to the surgeon the advantage of this information.

The object of a pathologic report should be firstly to describe in adequate detail the gross characteristic of the tissue submitted, whether it be a simple polyp or a massive malignancy of the sigmoid with extension to the regional lymph nodes and surrounding tissue. In the gross description of the lesion certainly the general aspects of the tissue, considering color, size and consistency, are essential. The gross dissection should enable the pathologist to determine the local size of the lesion, the degree and extent of inflammatory involvement, the evidences of perforation or scarring in and around the bowel wall. The number and location of lymph nodes showing inflammatory changes as well as actual clear-cut malignant involvement, are a necessity in

Presented at Seventh Annual Teaching Seminar, International Academy of Proctology, New York City, 1955.

the clear evaluation of the lesion. Thromboses in vessels, or evidence of vascular invasion which are evident grossly, should also be included in this description. The characteristics of the attached tissue, in addition to that directly associated with the lesion, should be included as a matter of record for future surgery or evaluation of the lesion in retrospect at some future date. With information as to the extent of the bowel resection, future surgeons and future pathologists can later evaluate treatment and diagnosis for any subsequent complication.

In the microscopic report, certain definite descriptions of the material are of help and of considerable importance to the surgeon or subsequent readers of the pathologic record.

Broders has adequately indicated the different results from different activities of tumors. This, of course, is certainly important. Whether or not a tumor is actively invasive or producing different types of secretions is, of course, of considerable help in evaluating the prognosis for the patient. The simple identification of the tumor as adenocarcinoma is hardly sufficient to give a clear idea to the surgeon or subsequent reviewers of the record as to the nature of the lesion and its characteristics.

In our own laboratories, definite procedures are followed by different lesions. I would like at this time to review these procedures.

Polyps Polypoid lesions of the lower intestinal tract are of course usually benign lesions. However, this particular evaluation of malignancy or benignity cannot be made without adequate study. Adequate studies to us consist of identifying whether or not there are evidences of abnormal changes in the epithelium covering the surface. This epithelium most often shows abnormalities at the tip, and this area is the one of choice in trying to find the most severe involvement. In this area so-called atypical changes of the epithelium are most frequently noted, these atypical changes being very hyperplastic changes associated with basophilic characteristics of the nuclei and the increase in mitotic activity. Sections taken through the tip of the polyp, therefore, will give the most information. Sections should also be taken from the stalk of polyp. These sections should produce a disc from the cylindrical mass of the stalk, preferably close to the bowel wall itself. This section will identify any abnormal changes in the epithelium which will persist at the lower level, and in addition they will also identify any evidence of malignant invasion through the lymphatic channels down through the stalk, and thereby indicate future management of the lesion. Polyps showing simple basophilism of the nuclei at the tip are benign but are potentially malignant. Simple excision should therefore suffice for their eradication, and the subsequent prognosis should not be of great concern. However, where the epithelium shows irregularities and multiple branching of the crypts of Lieberkuehn, and where there is various disruption of the normal tall columnar characteristics, concern need be observed for changes in the muscularis mucosa for signs of disruption of this layer. If, however, there are atypical changes on the surface, and yet no evidence of invasion is seen in the stalk, the need for concern is not great for possibilities of extension of the lesion beyond that which is readily excisable from the interior surface of the bowel.

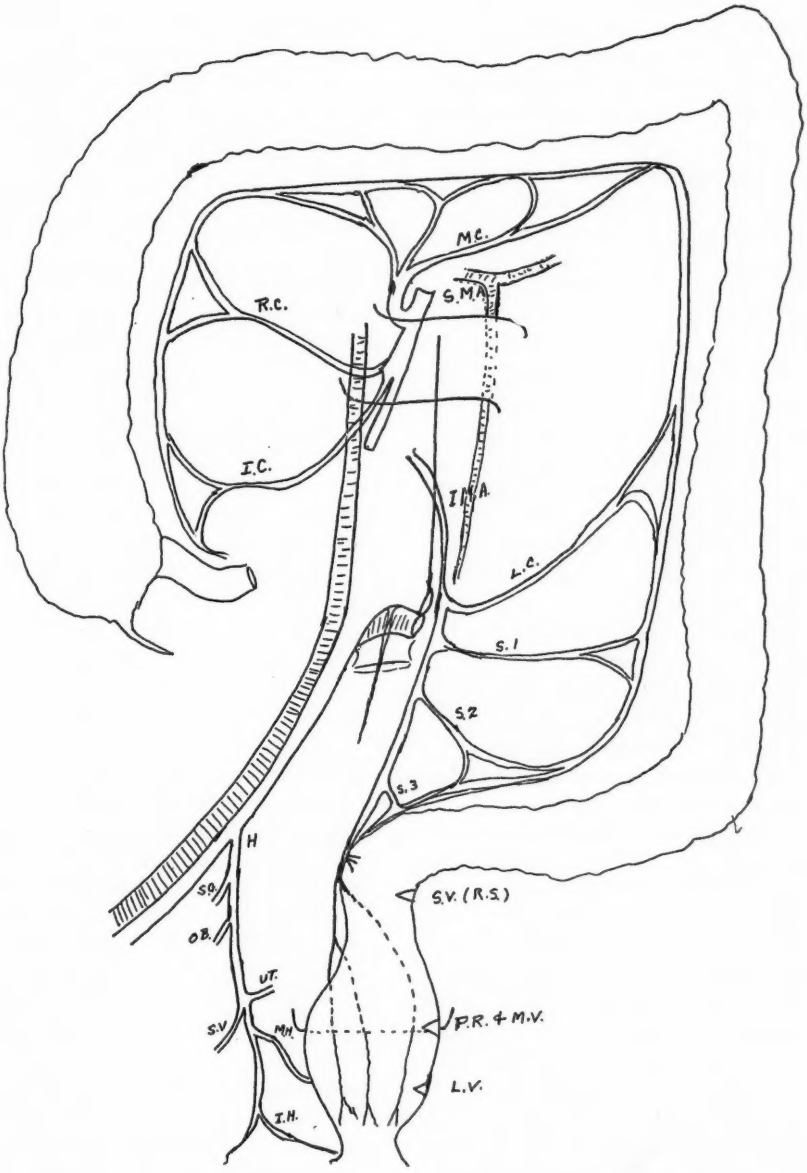


Chart outlining anatomical position of lesions in the colon, blood vessel and lymph node drainage of the bowel. Involvement is noted graphically for the entire lesion on the basis of microscopic data.

If on the other hand there is extension into this stalk, simple excision of that polyp will in all probability result in ultimate recurrence of the lesion with ulceration and perhaps more rapid extension of the tumor. In such cases, therefore, segmental resection of the bowel is the procedure of choice. In the instance of sessile polyps where the atypical changes are exaggerated on the surface and there is little or no stalk to be observed, frequently segmental resection would be indicated to insure the ultimate safety of the patient. The problem most often noted by the pathologist is the fact that so little description accompanies some of the lesions submitted for examination from an out-patient service. This considerably limits the pathologist's ability to give an accurate and adequate diagnosis and prognosis.

There are a number of lesions which require more elaborate gross and microscopic description because of their complex character. Those are the villous adenomatous polyps and the diffuse polyposis of the bowel wall. The villous adenomatous polyp is a treacherous lesion because of the fact that although sections from one area of the lesion may be benign, other areas may show actual invasive malignancy. These lesions have a very high malignant potentiality and should be viewed in that light. The character should be studied most thoroughly by the pathologist when it is discovered that this is the chief characteristic. The diffuse polypoid lesion is also fraught with great danger because of the misconception of the lesion by the describing pathologist. Frequently the tissue will be submitted much the same as a single polyp. When viewed in the laboratory the lesion has all the characteristics of a benign polyp showing hyperplastic changes. These changes do not carry with them a bad prognosis with a single lesion, but when the lesion is diffuse over a large segment of the bowel wall, it is impossible to excise it adequately by cutting its base. In these situations resection of the bowel is a necessary procedure.

AdenocarcinomaThe adenocarcinomas of the rectum and colon, we believe, deserve adequate and thorough gross and microscopic description. Without this information the surgeon finds himself with only the information he has obtained at the operating table. If the pathologist gives him nothing more than the confirmation of the microscopic sections, the surgeon is left with a limited idea of the actual extent of the lesion. In our laboratories we feel that rectal carcinomas should be given a description from two main points of view.

1. The lesion should be graded as far as possible. Most rectal lesions fall into a relatively low grade type, Grade I or II, on the basis of four. Rarely do we see a Grade III or Grade IV lesion. Grade IV lesions are more often metastatic. Although the lesions rarely go over a Grade II, nevertheless they do have the ability to metastasize readily.

2. The second main character which we believe to be important is the extent of the gross invasion of the tumor. We utilize Duke's classification, A, B and C, describing whether or not a lesion is limited to the mucosa, A being above the muscularis mucosa. The B lesion involves the wall of the bowel down into the muscularis mucosa. The C lesion involves the serosa or sub-serosal tissue. Identification of the tumor in a suf-

ficient number of areas to have this particular point clarified, is essential.

But in addition to the designation of the microscopic extent through the bowel wall, there are three very important features from the point of view of the prognosis. If the lesion has extended into the lymphatic vessels, this description should be made clear in the microscopic notes. Lymphatic channel invasion, of course, carries with it a much graver prognosis, and the knowledge of this is of considerable help in arriving at an accurate prognosis. Vascular invasion has been more prominently emphasized by pathologists in recent years because it has been found that vascular invasion is as frequent or more frequent than lymphatic invasion. Vessels involved by tumor cells within the vessel lumen carry with them a relatively grave prognosis. Lymph node involvement is of course most important. With local lymph nodes involved the prognosis is poor, whereas distant lymph node invasion carries with it a most grave prognosis. The number of lymph nodes, and the extent of these lymph nodes, we have used according to the accompanying chart to further clarify the processes and the extent of the lesion.

The description of these lesions, therefore, with all of their associated evidences of extension, is most important to the surgeon and the patient in arriving at the next phase of therapy.

Summary

An adequate pathologic evaluation of lesions of the rectum and colon is necessary for the proper management and ultimate concept of the prognosis. The essentials of an adequate pathologic evaluation are a complete gross description of the lesion and the associated tissue removed, together with identification of all possible areas grossly involved by the extension of a malignant lesion. Microscopically, the grade and extent and limits of the lesion should be clearly defined, together with an adequate description of the cellular components. With this information available, the surgeon is in a position to determine the extent of the surgical therapy which can be afforded to the patient to expect a cure or adequate palliation. Further, the surgeon is able to give the patient some concept of prognosis by virtue of this information.

3248 Rittenhouse Street

Trustee of International Academy of Proctology Honored

Carroll J. Bellis, M.D., F.I.A.P., surgeon of Long Beach, California, has been named recipient of the 1955 Mississippi Valley Medical Society gold medal, cash prize, and certificate. The award will be made in September in St. Louis, Missouri, where he will present his prize-winning essay on "Management of Acute Bowel Obstructions."

Radiation Fistulae in the Pelvic Area

HENRY A. SPRINGER, M.D., M.Sc., F.I.C.S.
Cincinnati, Ohio

The fistulae that occur in the pelvic area following radiation may be classified into two groups. The first group are the fistulae that are formed by a burn of the posterior vaginal wall which is followed by an ulceration of the vaginal wall that extends into the rectum. In our experience these vaginal-rectal fistulae should be treated by two daily vaginal douches and enemas until all inflammatory reactions have subsided and a firm fistulous tract has formed. At least six months should intervene after reaction has subsided before a surgical repair is indicated. The fistulae that have a single tract and lie within two inches of the anal outlet, are comparatively speaking simple problems.

We do not attempt to dissect out the fistulous tract. Before we begin the operative procedure, the fistulous tract is injected with methylene blue. This dye will aid in the event there is also a blind tract. The rectum is dilated, and the mucous membrane—beginning at the muco-cutaneous junction, is injected with saline-adrenalin solution. This ballooning up of the tissue with the solution aids in controlling oozing and in separating the mucous membrane from the muscle wall of the rectum. The incision is made 1 cm. medial to the muco-cutaneous edge, and mucous membrane is dissected back to just beyond the Morgagni columns. At this point on the posterior wall the incision is carried through the rectum. Through this incision the rectum is dissected up laterally on both sides and gradually brought down.

Then the dissection is continued anteriorly until the fistulous tract is met. At this point the tract is cut across just outside the rectal wall. This usually completes freeing of the rectum so that it can be exteriorized to a point beyond the fistulous tract without tension.

Then that portion of the rectum is amputated to just beyond the fistulous tract. The rectum is sutured with interrupted silk sutures to the muco-cutaneous edge. Then a rectal tube is inserted. This tube is held in position

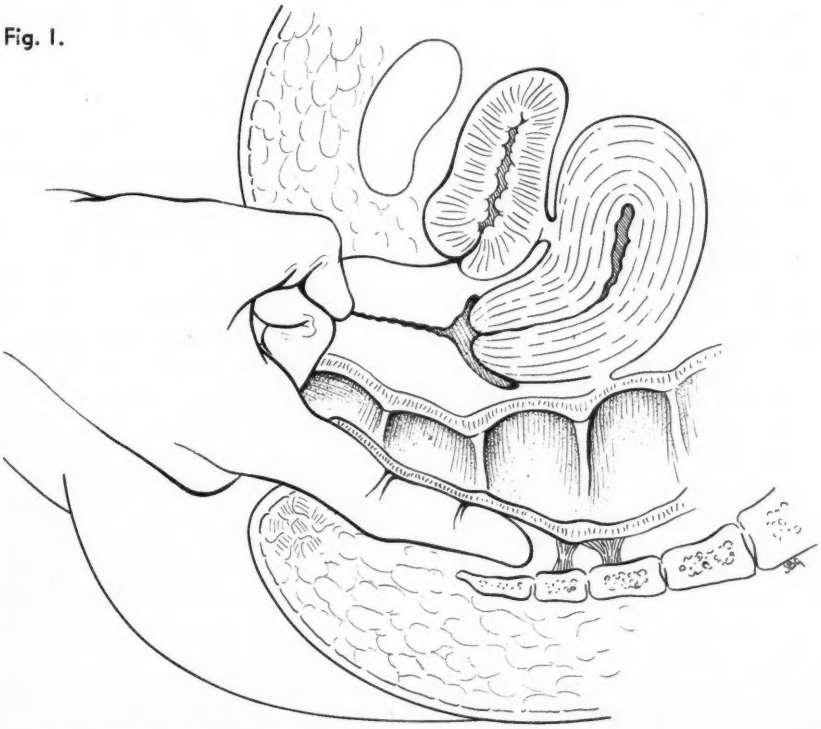
Presented at the Sixth Annual Teaching Seminar, International Academy of Proctology, Chicago, 1954.

by placing a suture in the skin of the buttocks and in the rubber tube. We do not try to suture the opening in the vaginal wall. This opening will act as a stab wound drain and will close without complications.

Post-Operative Care. Twice daily the patient is given a colonic irrigation through the rectal tube. The light we demonstrated is applied for 30 minutes 3 times a day. Its action is equivalent to sitz baths after hemorrhoidectomy. By the tenth day the wound is healed and the silk sutures can be removed. The rectal tube is removed. Mineral oil may be given daily and local medicated ointments applied. These patients will have control of bowel movements, and a normal appearance of the rectal outlet.

Vagino-rectal fistulae that are higher, anywhere from the cervix downward, are more serious problems. Usually there is much more induration of the rectum and vaginal wall; more frequently you will find also one or more blind tracts. In the case of these patients, after the rectum has been freed as pointed out in the simple cases, then the vaginal wall is retracted. The indurated area in the vaginal wall is examined to determine its size. The saline-adrenaline solution is injected into the vaginal wall so that the infiltration will surround the indurated tissue. Then an incision is made in the vaginal wall and the dissection continued in the wall surrounding the indurated tissue.

Fig. 1.



The resection of the rectum in these cases must be carried much further. Therefore after the freeing of the lower segment of the rectum, as stated in the simpler cases, the rectum is also freed from the rectococcygeal ligaments; then the finger is pushed over the tip of the coccyx subsequently following the sacral curve, freeing the rectum anterior to the finger (Fig. 1).

Next the finger is passed laterally and the ligments and levator ani are brought forward and grasped with hemostats and divided. A similar dissection is performed on the opposite side. Anteriorly the dissection is continued until the opening in the vaginal wall is reached; then that portion of vaginal wall with the fistula is dissected free. The dissection of the rectum is continued until it can be exteriorized beyond the fistulous tract without causing tension.

In this type of dissection we have been able to free the rectum so that four (4) to six (6) inches of the rectum can be removed. In the extensive dissection the cul de sac of Douglas is opened. On completion of the dissection the peritoneum is closed; then the rectum is amputated above the fistulous tract. The rectum is sutured to the muco-cutaneous tissue with silk sutures. The vaginal wall is repaired with silk sutures. The colon tube is inserted as in the simple cases. The final result in the case of these patients is that they usually have fair control of fecal current, but complain that they do have difficulty when cathartics are used.

The second group of pelvic fistulae are caused by radiation burns of the anterior vaginal wall which is followed by an ulceration of vaginal wall into the bladder. In former years we attempted to treat these cases by the textbook methods, as plastic repairs through the vaginal route, as is usually done for traumatic vesico-vaginal fistulae. We soon began to realize that in the case of radiation burns the blood supply in the indurated area is very poor; therefore, if we are to expect a cure, an operative method must be planned so that normal bladder tissue devoid of scar tissue is brought in apposition.

The following technique has given excellent results: The patient is placed on the operating table in the position that we use for abdominal-perineal resection, when one surgeon works in the perineum and the other surgeon proceeds with the abdominal dissection as a team.

The abdomen and perineum are prepared, and both areas are draped. A catheter is passed from the vagina through the fistulous tract into the bladder (Fig. 2). A longitudinal abdominal incision is made as far as the peritoneum; then the bladder is opened in the space of Retzius. A bladder retractor is inserted in the bladder. The bladder is examined. If the openings of the ureters cannot be seen, 1 cc of indigo carmine is injected;—within three minutes the orifices of the ureters will be made noticeable by the excretion of the dye. A ureteral catheter is inserted in each orifice, and the catheter is passed up the ureter so that the tip will rest in kidney pelvis. With the ureteral catheters in place, one can determine the position of the vesico-vaginal fistula in relation to the ureter, and therefore need not fear injuring the ureter during the dissection of the scar tissue around the vesico-vaginal fistula.

The end of the catheter that was placed in the vesico-vaginal fistula is

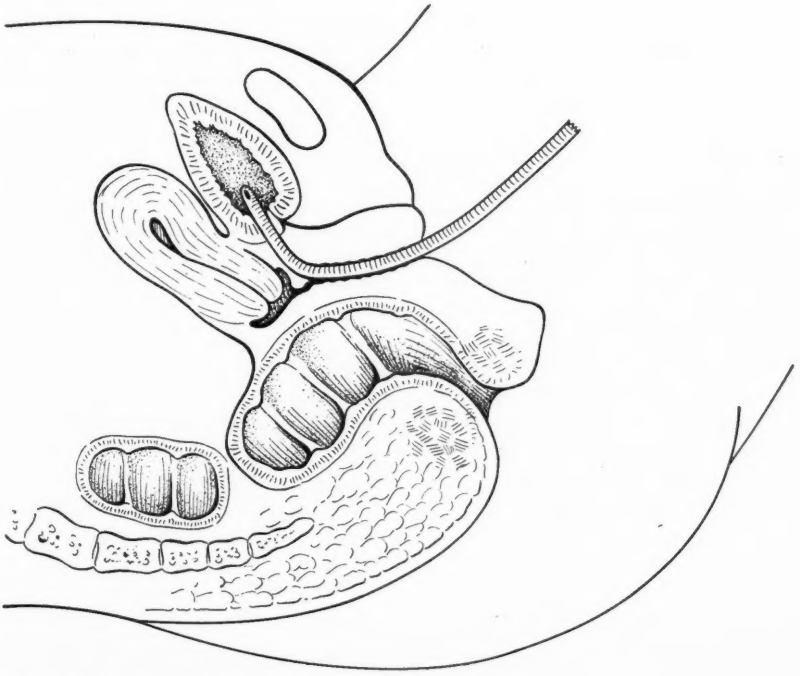
grasped with a hemostat and pulled up into the wound. The tissue around the fistula is examined to determine the extent of the indurated scar tissue that should be removed. The bladder wall around the indurated tissue is infiltrated with saline and adrenalin solution (1 cc of adrenalin in 60 of saline) to bring about an edema which will increase the thickness of the bladder wall to one-half inch or more. That will aid in dissecting the scar tissue.

With a special razor-blade knife that we have developed, an incision is made surrounding the scar tissue, and then the edges of the scar tissue are lifted up and the dissection is carried down to the vaginal wall, thus forming on completion a cuff of scar tissue around the catheter.

At this point of the operation, the tip of the catheter is cut off to make the end blunt. Then, with a fine chromic catgut the cuff of scar tissue is sutured to the end of the catheter somewhat in a purse-string fashion. A pull is then made on the catheter end which extrudes from the vagina, so that the cuff of scar tissue with the tip of the catheter is inverted into the vagina.

This procedure will leave the muscle layers of the bladder wall exposed and free of scar tissue. The muscle layers are brought together with fine interrupted catgut sutures. Then the mucous membrane is sutured with fine chromic catgut.

Fig. 2



Before closing the anterior bladder wall the surgeon passes a catheter through the urethra into the bladder. To the tip of the catheter a piece of rubber tube—three feet long and having the same diameter—is attached, and the catheter is removed with the rubber tubing being pulled through the urethra, so that it extends out twelve inches beyond the urethral meatus. A hemostat then grasps the rubber tubing at the base of the bladder. The tubing is brought up into the wound and three small holes are cut into the tubing, so that when the hemostat is removed and the tubing returned to the bladder, the three holes in the tubing will act as openings in a catheter.

The anterior bladder wall is closed in two layers, leaving the proximal end of the tubing and the two ureteral catheters extruding from the upper end of the wound. The abdominal wall is closed with figure 8 silk sutures. After the patient is returned to bed, the upper end of the rubber tubing is attached to a Murphy drip bottle so that saline solution can constantly drip into the bladder. The saline dilutes the urine and also prevents clots from forming in the bladder that may otherwise block the openings in the rubber tubing at the base of the bladder.

The lower end of the tubing is attached to an extension tubing that leads to a bottle under the bed to collect the urine. The ends of the two ureteral catheters are placed in a bottle to collect urine that may flow directly from pelves of the kidneys. These catheters may be removed on the fourth day if the kidneys show normal function, because by that time the edema that may form near the ureteral orifice following surgery begins to subside. After forty-eight hours the patient is allowed to be up. On the tenth day the rubber tubing that takes the place of a catheter is removed. The catheter that extrudes from the vagina is left *in situ* until it falls out.

Conclusion

The procedure we have described is simple to perform. It allows early ambulation and involves no more discomfort than that following any other laparotomy, and leaves the patient with a normally functioning bladder.

869 Ludlow Street

Management of Pain in Carcinoma of the Rectum

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The alleviation of pain is a problem that has always occupied the attention of man. Extensive research on this subject within the last century has considerably increased our knowledge regarding perception of pain, pathways of pain from the receptor organs to the cerebral cortex, and to some extent, the nature of man's reaction to pain. The fact remains, however, that much more has to be learned as to what happens to the pain impulse when it reaches the internuncial pool in the central nervous system, and to the modification that it undergoes when it arrives at the highest integration centers in the brain.

Anatomic Pain Pathways Nerve fibers which convey pain impulses from the rectum or from most of the viscera in the deep pelvic area have certain characteristics in common, namely:

1. The nerve fibers usually pass through the pelvic nerves through the posterior roots into the spinal cord.
2. The nerve fibers are small, poorly myelinated or unmyelinated.
3. The rate of conduction through these fibers is very slow.
4. They do not synapse in the ganglia of the sympathetic chain.

Afferent Pathways

Structure	*Entrance into CNS*	*Site of Pain*
Sigmoid	L_1, L_2	Deep pelvis
Rectum	$S_{2, 3, 4}$	Anus
Anus	$S_{4, 5}$	Anal area

These fibers have erroneously been called sympathetic afferents. The *sympathetic* nervous system is efferent in nature. The proper term for these pain fibers, therefore, is "visceral afferent". They are somatic in nature. The afferent fibers enter the posterior roots, synapse in the posterior root ganglion, and then enter the spinothalamic tracts. In crossing over to the opposite side, they be-

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come intimately associated with the internuncial pool. They travel in the spinothalamic tracts all the way to the higher pain centers in the brain.

Pathologic Physiology It has been shown experimentally in animals and in patients undergoing abdominal surgery, that the chief cause of pain in the gastrointestinal tract is *distention*. This may be amenable to surgery. When the pain becomes chronic and intractable as in carcinoma, several factors may contribute to it: a) there may be an invasion of adjacent structures, b) there may be an infiltration or compression of nerve trunks and plexuses by tumor tissue, c) there may be infiltration of blood and lymph vessels causing ischemia and engorgement (venous and lymphatic), d) there may develop some infection, inflammation and even necrosis of adjacent structures. The presence of most of the above mentioned factors will give rise to a combination of the three chief types of pain as previously described by Lewis, namely 1) a sharp neuralgic pain, 2) a diffuse burning pain — sympathetic pain, and 3) a dull, poorly localized, diffused pain—visceral pain.

Management of Pain

The Analgesics These groups of drugs have always been the standby for the mitigation of pain. Except for their ability to relieve pain, these agents have nothing in common as regards their chemistry or physical characteristics. Their site of action for relieving pain has been a moot question for a long time. One reason for this is probably that most investigators failed to appreciate the difference between perception of pain and reaction to pain. Although many methods were devised to measure pain threshold, the majority measured pain reaction threshold instead of pain perception threshold. Wolff et al utilized thermal radiation to measure threshold for pain perception. They found this to be relatively constant in the trained subject. Whereas, employing the same method to measure reaction to pain, they found the variation great even in the trained subject. Further studies by Hardy, Wolff and Goodell on the effect of the different groups of analgesics on the pain perception threshold afforded an insight into the probable site of action of these drugs. The different groups of analgesic drugs either elevated the threshold for pain perception, modified reaction to pain, or both. Analgesics induce a dissociation between the perception of pain and the reaction to pain.

The analgesics may be classified into the following:

I. Analgesics with Antipyretic Action

1. Pyrazolon derivatives
   a) Antipyrine
   b) Aminopyrine
2. Paramidophenol derivatives
   a) acetanilid
   b) phenacetin (acetophenetidin)
3. Salicylates
   a) acetylsalicylate
   b) sodium salicylate
4. Quinoline
   a) cinchophen

These drugs are mild analgesics. Their chief action is to raise the threshold of pain perception. They have no effect on the reaction to pain. Studies by Wolff et al, employing the dolorimeter to test the pain-relieving qualities of some members of this group, show that their effectiveness is comparable to relief of pain induced by hypnosis, autosuggestion, and distraction. They may

be of some value in the management of pain in early rectal carcinoma. Their effectiveness in the relief of musculoskeletal pain is common knowledge.

II. The Opiates

DRUG	ANALGESIC POTENCY	DOSE	ABSORPTION ORAL	ABSORPTION INJECTION
Morphine	1*	8-16 mg.	Poor	Good
Pantopon	1/2	10-30 mg.	Poor	Good
Codeine	1/6-1/8	16-64 mg.	Good	Good
Dilaudid	5	1-4 mg.	Fair	Good
Heroin	5-8	1-5 mg.	Poor	Good

*Morphine is taken as 1 in analgesic potency.

This table is based on experimental studies of Seever and Pfeiffer, later confirmed by Wolff, Hardy, and Goodell, employing their dolorimeter. There have been some objections to the applicability of the above experimental data to clinical pain on the ground that there are many other factors involved in reaction to pain that may be difficult to measure. Clinical observations, however, show minimal deviation from the above-mentioned dosages until addiction develops. Then the picture changes completely.

Of the opiates, morphine is still the best drug of the group. Its analgesic action is longest, although not as potent as dilaudid or heroin. Dilaudid is a very potent analgesic drug, but its duration is brief and its toxicity compared to morphine is slightly greater. The same is true with heroin, which is one of the most effective analgesic drugs of the opium group. The chief objection to this drug is intense euphoric action. Addiction to it develops easily and rapidly. Codeine is a relatively mild analgesic. Its only advantage lies in that it causes very mild side reactions like depression, nausea, and vomiting. Addiction to codeine is minimal. Combining codeine with a member of the antipyretic analgesics provides a good pain relieving compound.

Of the dosages given in the table, the smaller dose is the minimum amount of the drug that can give an appreciable analgesic effect, whereas the bigger dose is the greatest amount of the drug that will give the maximum analgesic effect. Increasing the amount of the drug above this will not increase analgesia much more, but will increase toxicity out of all proportion to the benefits gained. These statements are made on the presumption that addiction has not entered the picture.

The opiates also raise the threshold for pain perception. Their ability to relieve pain is greatly augmented by their modifying action on the reaction to pain. The euphoric state induced by the administration of the more powerful members of the opiate family has been shown to outlast the effect on the threshold for pain perception considerably.

In view of the extensive use of morphine and the other opiate derivatives,

some of the other pharmacological effects aside from analgesia must be mentioned. Morphine is primarily a CNS depressant. It depresses the respiratory center considerably. Morphine is destroyed chiefly by the liver. Thus, in the presence of liver disease such as extensive invasion of the liver by metastatic tumor, the action of morphine may be grossly magnified and prolonged, especially on the respiratory center. This can cause death. Through its effects on the kidneys and bladder, urine output may be diminished. Of the side actions, however, nausea and vomiting can be very annoying.

III. Synthetic Analgesics

DRUG	ANALGESIC POTENCY	DOSE	ABSORPTION ORAL	ABSORPTION INJECTION
Morphine	1*	8-16 mg.	Poor	Good
Demerol®	1/5-1/10	75-125 mg.	Fair	Good
Methadon®	1-1½	5-15 mg.	Good	Good
Nisentil®	½-¼	20-40 mg.	Good	Good
l-Dromoran®	2	4-8 mg.	Good	Good

*Morphine taken as 1 in analgesic potency.

There is as yet no ideal analgesic. However, the search for one has resulted in the development of several interesting and useful compounds. One of the earliest to be synthesized is Demerol. It is a compound that is closely related chemically to atropine, having spasmolytic properties but also a good analgesic. It has a mild sedative action, and because its euphoric action is very little, habituation develops much slower as compared to morphine. Given orally, the absorption is rather poor and the effect not too good.

Methadon is another synthetic drug that is almost equal to morphine in analgesic potency. Milligram for milligram, the degree of analgesia induced is equal to, if not a little more than morphine. Euphoria is absent or minimal, as is true with most synthetic analgesics. Tolerance and addiction develop with prolonged use, though not as frequently and not as intensely as with morphine. Methadon has been used for the treatment of the withdrawal symptoms of morphine. It is a good substitute for morphine as far as analgesia is concerned. One advantage over morphine is the mildness of side actions like nausea and vomiting.

Nisentil is similar to Demerol in chemical structure. It is more potent. Its usefulness lies in the fact that its effect, given orally, is almost equal to its effect given by injection. It has a very brief action—1 to 2 hours. Because of this brevity of action, it may not be of much use in the alleviation of intractable pain of rectal carcinoma. Its value lies in the fact that it may be rotated with the other analgesics so as to delay or prolong the development of addiction.

Dromoran or its more active form, Levo-Dromoran is chemically related to morphine. It is a very potent anal-

gesic. It is as effective orally as by injection. Its analgesic action lasts for as long as 6 to 8 hours. It is a fairly good sedative, but induces much less euphoria than morphine. Again, because of its mild euphoric action, addiction is delayed. Clinical experience with the drug seems to show that tolerance develops readily. Levo-Dromoran is proving to be of inestimable value in the alleviation of pain. The fact that it is quite effective orally makes it very useful in cases where frequent injections over prolonged periods may make this procedure intolerable. It must always be kept in mind when using the opiates and the synthetic analgesics that they are very powerful depressants of the CNS, and are primarily metabolized in the liver. One must always be careful, therefore, of administering big doses of these potent analgesics to cachetic individuals and persons with severe liver damage. Fatalities have been reported. The other point to be aware of is addiction and tolerance. One way of circumventing such is to employ the different analgesic drugs for short periods in rotation. In this manner, tolerance and addiction may be delayed considerably. Of course, one drug that has come into use recently is N-allyl-normorphine (Nalline®). It antagonizes the action of the opiates and the synthetic analgesics. It is a very valuable antidote against poisoning from the different members of the opiate group and the synthetic analgesics. The dose is from 5 to 20 mg., preferably administered intravenously. However, it is a drug that causes depression of the central nervous system in the person who has not received any opiate or any of the synthetic analgesics.

IV. Intravenous Analgesics

This group includes intravenous alcohol (4-5% in 5% dextrose in water), and the local anesthetics like procaine, Pontocaine, and Intracaine. They are not of too much value in the management of intractable pain as their effect is transient, and frequent administration induces the development of a tolerance so that prolonged periods of use diminish their value.

V. Miscellaneous Drugs

1. *Cobra Venom (Cobroxin®)*—Much has been claimed about the value of this agent in the mitigation of intractable pain. Our brief experience in the use of this preparation has proved to be somewhat confusing. Employing doses that have provoked toxicity like dizziness, nausea, and vomiting, relief of pain has been almost negligible in some, although it works very well in others. It should be tried in most cases of intractable pain on the possibility that it may alleviate the pain. Huge doses of the preparation may have to be given to produce any relief. This biological product deserves further evaluation.

2. *Chlorpromazine* — This drug is proving to be very useful as a potentiator of analgesic action. In a clinical study performed on patients suffering from intractable pain due to carcinoma, Sadove et al found it possible to reduce the amount of analgesic necessary to relieve pain by administering chlorpromazine together with the analgesic used. The dose of the analgesic can be reduced to about 50% of the necessary amount with chlorpromazine. They find it possible to revert to a milder form of analgesic in some cases.

There is still much to be learned about the pharmacology of chlorpromazine. The fact that it can potentiate the CNS effects of sedatives and analgesics gives promise of its becoming a valuable ad-

junct in the management of pain.

3. *Barbiturates*—As a group, barbiturates are very poor analgesics. They are very good sedatives in that they produce cortical depression. They do not raise the pain threshold, although they may affect reaction to pain definitely. If combined with an analgesic, they may augment pain relief by inducing sedation at the same time.

Nerve Blocks For intractable pain, nerve blocking procedures are becoming more and more useful. In the terminal stages of carcinoma, where intractable pain makes life miserable for the patient, a chemical neurectomy may be the answer.

Blocking Agents

I. Local Anesthetics — Pontocaine, Procaine, Nupercaine, Cyclaine, Intracaine, Pravocaine, Lidocaine, etc.

II. Alcohol — 33½-95% ethyl alcohol, benzyl alcohol

III. Phenol—6-15%

IV. Dolamine and Neodolamine — composed of ammonium sulfate, benzyl alcohol

V. Efocaine — procaine base, butesyn, propylene glycol

The value of local anesthetics in the management of intractable pain is very limited. Their effect is transient, and interestingly enough, whenever temporary relief is given to an intractable pain patient, the pain that comes back seems to be much greater, almost insufferable. The usefulness of local anesthetics is in the differential diagnosis of the pain. It is possible to tell, by using very dilute concentrations of the local anesthetics, whether a block of the sympathetic pathways or of the somatic pathways will relieve the pain. Once this is established, a more permanent type of block may be performed. Repeated blocks with a local anesthetic may be done. On rare occasions, repeated blocks with local anesthetics, espemially the long acting ones, may produce prolonged relief of pain.

Ethyl alcohol and benzyl alcohol are the members of this group that are frequently used for the more permanent type of blocks. Ethyl alcohol has been used in concentrations varying from 33½ to 95%. It causes a degeneration of any nerve fiber exposed to it. There is always a subsequent regeneration of the nerve fiber as long as the central nerve cell remains intact. The susceptibility to the neurolytic action of alcohol is greater for unmyelinated and poorly myelinated nerves. The current concept is that any concentration of ethyl alcohol below 50% seems to have more of a selective action on sympathetic and sensory fibers, whereas any concentration above 50% will indiscriminately destroy all nerve fibers. Ethyl alcohol, injected into tissue, causes necrosis. Its tendency to spread is very limited, but it can follow the course of a nerve. One of the great disadvantages of ethyl alcohol as a blocking agent is its propensity to provoke neuritis, which may be as severe as the pain for which the block was intended. It is a blocking agent that the unskilled and inexperienced should avoid using. Benzyl alcohol is very poorly soluble in water so that it has not been too popular for block purposes. It has been combined with other agents like dolamine and has been used as bromsalizol 4% in peanut oil.

Phenol 6% has been very impressive in its ability to effect a chemical neurolysis of autonomic ganglia and fibers. The reaction elicited by its injection is not as intense as that of alcohol. Studies

by Adriani el al show that it causes as much necrosis and nerve tissue destruction as ethyl alcohol. The incidence of neuritis is much less as compared to alcohol. We have found this drug to be a very valuable tool for the production of chemical neurectomy. Its ability to diffuse in fascial planes is quite limited, so that relatively big volumes of the agent may be used to produce any kind of an effective block at all. We have employed anywhere from 20 to 30 cc of the 6% phenol for splanchnic blocks.

Dolamine and Neodolamine are agents that have attracted the attention of several investigators of the pain problem. Both these drugs are supposed to have a selective action on the sensory fibers without affecting the motor component of the nerve. Dolamine, which is one of the original mixtures used by Judovich and Bates, is composed of 0.75% ammonium sulfate and benzyl alcohol. We have not found this to be too effective as a blocking agent. It is possible that the chief action of the compound may be ascribed to the benzyl alcohol. Lately, a compound called Neo-dolamine has been brought to our attention. It is composed of ammonium sulfate 2.5%, benzyl alcohol 2%, and procaine 1%. In the few cases that we have employed it, the blocking action was quite good. It holds promise. Lundy, of the Mayo Clinic, has advocated the use of 6% ammonium sulfate.

Efocaine,® which is composed of procaine base, procaine hydrochloride, butyl-p-aminobenzoate, and dissolved in polyethylene glycol-300 and propylene glycol, has been used considerably for blocks around the ano-rectal area. Unfortunately, many adverse reports have come up lately citing serious complications that may arise with its use. It is unfair to condemn an agent on the basis of complications that can also develop with any other powerful neurolytic agent like alcohol or phenol. Efocaine may be utilized as a blocking agent provided it is injected into a site that is not in close proximity to the spinal canal, or into tissues that may be in close continuity with the spinal cord. This precaution minimizes the possibility of enabling the agent to find its way into the spinal canal to cause transverse myelitis, as reported.

Types of Blocks For intractable pain around the ano-rectal area, the following blocks may be used:

1. *Caudal* — This implies the introduction of a neurolytic agent into the sacral canal in order to block sacral nerves 2, 3 and 4. The sacral canal has quite a big capacity, and the introduction of a big volume of a destructive agent into the space can be fraught with unpredictable hazards. There is absolutely no means of controlling the spread of any solution that is introduced into the caudal canal.

2. *Sacral*—This consists of introducing block needles into the sacral foramina and injecting the neurolytic agent like phenol or alcohol. The degree of control over the agent in this procedure is much greater than with the caudal in the sense that a smaller amount of the solution can be used. The distance between the posterior and anterior foramina is so small that frequently, the needle goes straight into the pelvic cavity.

Both caudal and sacral blocks always bring up the possibility of paralyzing part of the sciatic nerve which takes origin from L_4 and L_5, and S_1, S_2 and S_3.

3. *Intrathecal Alcohol*—If done with great care, this procedure is very valu-

able in the relief of intractable pain around the anorectal area. The loss of sphincter control of the bladder is always a hazard, but the relief of pain may far outweigh the disadvantage of bladder and bowel incontinence, especially in the terminal patient. It is primarily indicated in only the preterminal, bedridden patient.

The one factor that may greatly diminish the efficacy of nerve blocks in pain of rectal carcinoma is the presence of bilateral pain. This implies the blocking of pain pathways on both sides. That this is quite an extensive procedure cannot be denied. In the preterminal patient, however, it may be of some value by alleviating the pain considerably.

Neuro-Surgical Procedure It is beyond the scope of this paper to discuss these procedures, but they are being briefly mentioned as possibilities to be seriously considered in the management of intractable pain. To mention the more important ones, they are:

1. Posterior rhizotomy—section of the posterior roots.

2. Chordotomy—section of the spinothalamic tracts.

3. Prefrontal lobotomy.

In the cancer patient who can withstand a fairly extensive surgical operation, a posterior rhizotomy or a chordotomy may be a worthwhile procedure. Where the pain from the carcinoma site is bilateral, such procedures may hardly be worthwhile performing. Prefrontal lobotomy may bring about a change in the personality of the individual which may be a trial and a strain on his family. Prefrontal lobotomy does not interrupt pain pathways. It changes the attitude of the patient towards his pain.

Summary

1. A brief review of the anatomic and pathologic physiology of pain around the anorectal region is given.

2. The various methods of managing intractable pain are discussed with heavy emphasis on the pharmacology of analgesic drugs and the neurolytic agents like alcohol, phenol, dolamine. The different block procedures which may be useful in anorectal pain are briefly touched on.

1853 West Polk Street

Acute Abdominal Pain

A Result of Dissecting Aortic Aneurysms

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Part 2

Discussion Dissecting aneurysms of the aorta have been recognized from a description made by Morgagni in 1760.[3] He gave details in several of his cases which indicated that he appreciated that blood forced its way by degrees and obliquely through the aortic wall . . . "coming out under the external coat of the artery, first by drawing it from the internal coats and then by raising it as a large kind of ecchymosis". Shennan[3] analyzed 300 cases of dissecting aneurysm including 17 of his own. To clarify his introduction to the subject he began as follows:

"A dissecting aneurysm is the lesion produced by penetration of the circulating blood into the substance of the wall of a vessel with subsequent extension of the effused blood for a varying distance between its layers." He further indicates that, "The sac communicates with the original lumen through a rupture or ruptures of the inner layers of the wall, and though in a few cases it remains as a hematoma, it more usually ruptures either to the exterior or back into the lumen. In the latter event, the original symptoms may disappear and the patient recover, with an additional endothelium-lined channel through which blood circulates." It seems that the lining of such a new channel may in turn be altered by atherosclerosis. This change was noted by Weiss, Kinney and Maher[4] in three patients who had healed and functioning dissecting aneurysms. In two patients the atherosclerosis was mild and in one it was pronounced. The change was accurately timed as occurring in twenty-three months in their one female patient. She had a double aortic shadow demonstrable on x-ray, and the endothelialization and scerosis of the new channel lining were studied in detail after necropsy.

The protracted course of dissecting aneurysms with production of a double channel in the aorta is repeatedly noted by numerous authors who have had access to a series of such vascular catastrophies. Thus Shennan[3] records 79 of the 300 cases he reviewed as old "healed" aneurysms. Flaxman[5] in re-

viewing 19 cases seen at the Cook County Hospital, Chicago, Illinois, designated sixteen as old. Twelve were further classified as silent with a gradual onset and symptoms and signs of heart failure. None of the patients in this series were diagnosed clinically.

In a five year period 1933-1937, Mote and Carr[6] encountered sixty cases of dissecting aneurysm at the San Francisco Coroner's Office. This represented an incidence of 1.1% of 5,339 nonviolent deaths and is comparable with cardiac rupture which had an incidence of 1.5%. In addition, reports are given of four patients in whom an ante mortem diagnosis was made of dissecting aneurysm. One female in the latter group was carried through a pregnancy after the diagnosis was made. The mode of death was by external rupture in 57 of the 60. In forty of these the hemorrhage was into the pericardial sac and resulted in cardiac tamponade. One patient died of each of the following: heart failure; obstruction of the vena cava; and rupture of an associated aneurysm. Only twenty-six patients were seen by a physician before death. There were three diagnoses of dissecting aortic aneurysm and one of aneurysm. Twelve patients had a diagnosis of some cardiac condition such as heart failure, myocarditis or arteriosclerotic heart disease. The other diagnosis varied from acute indigestion to lumbago.

Most enlightening is the review of dissecting aneurysms by the group[7] at the Massachusetts General Hospital. They refer first to 19 cases of dissecting aneurysm of the aorta reported from that institution for the period 1897-1936 by Glendy[8] et al. Only two patients in that period had a correct diagnosis made ante mortem. Although 19 patients were studied, only thirteen had an acute dissection which was directly associated with death. A second study at the same hospital for the period 1927-1936 showed eight additional cases. This was an incidence of 1 in 376 autopsies.

In the latest paper the authors review 17 cases of dissecting aneurysm and report a correct ante mortem diagnosis in 41%. This is the best percentage yet reported and is more than double the 20% reported by Leitch[9] in 1944. The latter reviewed 282 cases in detail.

The foregoing reports deal primarily with aneurysms which have dissected the root, arch, and thoracic portions of the aorta. Death has been within a short period after the onset of symptoms and syphilis has been encountered in many. Thus Crowell[10] reported four cases of dissecting aneurysm and found two patients had syphilitic aortitis. White[7] found two patients with syphilis among 17 dissecting aneurysms his group reported. Roberts[11] reports a ruptured ascending aortic aneurysm plus numerous small dissecting aneurysms of the abdominal aorta in a treated syphilitic patient thirty-three years of age. Roberts reported twenty-seven cases of medionecrosis in the literature at that time, and all the patients had died of dissecting aortic aneurysm which had ruptured. More frequently the changes in the aorta have been characterized as atherosclerotic and often tears of the aortic lining have been noted at sclerotic plaques. This occurrence is compatible with our present concepts of aortic changes in atherosclerosis. Thus Crawford and Levene[12] point out that the familiar intimal bulge of sclerotic plaques is a postmortem artefact. In aortas, fixed in the usual way and also in the distended state at arterial pres-

sure, they were able to demonstrate medial thinning beneath sclerotic plaques. They conclude that medial thinning is not a result of the atheromatous process but an essential part of it. The lesion as a whole is thus comparable to a shallow aneurysm partially or completely filled by the plaque of intimal thickening.

The increased life expectancy noted in our country has brought with it an increase in vascular disorders. Counted prominently with these in recent reviews of the subject are aneurysms of the large arteries and dissecting aneurysms especially of the abdominal aorta.[13] The trend from obliterative procedures in the treatment of aneurysms, has proceded through restorative, and reconstructive cycles. The highlights of these various processes are summarized by Matas[14] at a meeting of the Society for Vascular Surgery in 1953. He described minutely the process of suture he employed to close the collateral vessels from within the aneurysmal sac in the arm of a patient. This operation, termed endoaneurysmorrhaphy, was used by him in additional patients. At the time of his retirement, this surgeon had done a total of 620 operations for aneurysm, 519 of which were by ligation of various types, including the use of removable aluminum bands. Another pioneer in this work was Carrel,[15] who, in 1902, used stay sutures to convert round arterial ends to triangles, advised use of a continuous everting stitch and suggested suturing over absorbable caramel rods. Smith[16] re-evaluated the use of such rods.

The intriguing possibilities of transplanting organs and blood vessels has always had a strong appeal to some surgeons. Watts[17] succeeded in transplanting segments of jugular vein into the carotid artery of animals. He described an increase in connective tissue in the vein segments which thickened the intima and media.

More recently studies on weanling pigs have been made to observe the changes in aortic homografts both fresh and preserved. It was found by Nyhus et al.[18] that the duration of graft preservation probably does not significantly alter graft growth. They also found that growth occurred, but at a slower rate than that in the host aorta, when short or long, fresh or preserved thoracic aortic homografts were used. Additional attempts to make compilation grafts of subclavian artery to bridge defects in the thoracic aorta of dogs is reported by Schmitz[19] and his co-workers. They fashioned one and two-piece grafts for accurate approximation in end to end suture in aortic defects.

The employment of growing animals and elaborate studies on the transplanted vascular segments resulted in the brilliant work on coarctation of the aorta by Gross.[20] Not only did he give a terrific impetus to the surgery of coarctation, but his experiments in blood vessel preservation helped smooth the way for the establishment of blood vessel banks. A variety of methods were used to preserve segments of arteries and aortas. Thus some vessels were preserved by carbon dioxide—ice refrigeration at —50°C., others at 2 to 4°C., in a modified Tyrode's solution containing nutrient elements. Still others were frozen and subjected to high-voltage, Cathode Ray Irradiation.[21] A method which has permitted satisfactory preservation for at least two years has been adopted temporarily at the Naval Hospital at Bethesda, Maryland.[22] There, vessels

removed from selected dead bodies are removed by sterile technique, frozen in a mixture of absolute alcohol and dry ice at —78°C. for five minutes and then freeze-dried in a vacuum at 35°C. for 72 hours. During the last 24 hours the temperature is raised to 30°C. The grafts contain less than 1% of normal unbound water content and are then kept in sealed tubes until they are used. At the time of implantation, grafts are reconstituted by placing them for 30 minutes in a large volume of physiologic saline containing penicillin and streptomycin. The vessels, although non-viable, regain the physical properties of a fresh artery. Their use has lowered the incidence of complicating thrombosis and hemorrhage. Replacement of the freeze-dried graft with host tissue is more rapid and there is less foreign tissue response than is obtained with fresh arterial homografts. The grafts employed were from 4.5 cm. to 20 cm. in length. Especially pertinent to the present discussion is a report by these authors of a resection of the abdominal aorta below the renal arteries, the left common iliac artery and the proximal parts of the right internal and external iliac arteries in one piece. This defect was replaced by a preserved homograft and resulted in improved circulation.

The use of preserved homografts, improved surgical techniques, and a realization that blood vessel surgery is often dramatically successful, are rapidly expanding its uses. The accelerated tempo of this work and its far-reaching significance were summarized by Brigadier General Seeley.[23] "Training and experience in boldness of exposure, prevention of hemorrhage, and meticulous technique will serve to qualify surgeons in the art of operating on the vascular system. It will develop confidence in the performance of other major surgical procedures. It will stimulate professional advancement by the knowledge that the repair of great vessels damaged during operation, or by trauma, or involved by neoplastic growth will be dealt with successfully." In discussing problems of cardiovascular surgery, Maloney and Blalock[24] list twenty-three conditions amenable to operation. Among the disorders in which they think surgical treatment may accomplish good or excellent results are arterial aneurysms. This optimism is confirmed by Cooley and DeBakey,[25,26] Bahnson,[27] Johns,[28] and Julian,[29] who have performed successful operations for the repair and resection of dissecting aneurysms. In an exhaustive review of the literature from January 1951 to October 1952, Nabatoff[30] devotes considerable space to the treatment of aneurysms. In addition to aortic resection as exemplified by the case of DuBost et al.,[31] he describes in detail the occluding technique as employed by Blakemore.[32] This surgeon partially occludes an aneurysm by applying a rubber band wrapped with reactive polythene film proximal to the sac. To hasten the coagulation of blood within the sac, insulated wire is inserted in coiled fashion into the aneurysm and has a heating current passed through it. The combination of methods leads to gradual occlusion of the aneurysm and allows a collateral circulation to develop. Metals have also been employed by Stone and Lord[33] in an effort to obtain an effective thrombogenic wire to occlude the aortic lumen. They found that an alloy of magnesium containing 2% aluminum was suitable for clinical use. Plain magnesium wire was found to be twice

as thrombogenic as stainless steel.

The use of metallic tubes to replace aneurysmal sacs, bridge vessel defects, and form new vascular channels has been tried repeatedly. At times results have been achieved in desperate cases. Blakemore[34] employed vitallium tubes in shunts for the relief of portal hypertension and recommended them for restoring blood flow through large saccular aneurysms. Such tubes found use by DeBakey and Simeone[35] in the repair of arterial wounds in battle casualties. Weiss and Lane[36] favored the use of tantalum tubes for vessel repair. They threaded vein grafts through tantalum tubes. There are numerous instances where vein segments alone have been used to supplant arterial defects. One early report of this procedure is that of Lexer[37] who resected an aneurysm of the femoral artery and implanted a graft from the saphenous vein.

Since vein segments in an arterial circuit often show early sclerotic changes or dilate to form aneurysms, and since nonfunctioning substances may deteriorate or lead to other serious complications, additional vessel support has been suggested by a group of Michigan surgeons. Hammer, et al.,[38] have employed, experimentally, an isolated segment of dogs' ileum or jejunum to furnish additional musculature around aortic grafts. The intestinal circulation is kept autonomous and only the mucosa is removed before application to the arterial wall. Animals with blood vessels so treated have lived for two years without aneurysm formation and the vessels functioned. The transplanted musculature remained viable and responded to drug stimulation at laparotomy. Since it has been repeatedly demonstrated that endothelium will line a blood vessel graft[4] additional support for the remainder of the wall is essential. Klotz[39] showed that a) intimal degeneration occurs in forty-eight hours in arterial grafts and is then followed by a regeneration inward from the viable tissue contiguous to the graft. b) There is a gradual replacement of the muscle cells of the media by collagen fibers and there is a persistence of elastic fibers for many months. c) The grafted segment was surrounded by a layer of granulation tissue which replaced the degenerated cells with connective tissue. This tissue was sometimes converted by metaplasia into cartilage and bone.

The foregoing sampling of the more recent experimental and clinical efforts to cope with the growing problem of vascular diseases shows the widespread interest in the subject. The encouraging clinical recognition of dissecting aneurysms of the aorta assures more venturesome approaches to its surgical correction. Improved methods of x-ray visualization of the vascular system promise more ready identification of operable processes. The appreciation that about twenty percent of dissecting aneurysms of the thoracic aorta[40] gives rise to gastrointestinal symptoms is a prerequisite. Still more vital is the fact that a much higher percentage of patients have bowel symptoms with dissecting aneurysms of the abdominal aorta. This is more readily comprehended after a brief enumeration of the nerve plexes[41] likely to be stimulated or pressed upon by the aorta. In expanding, because of blood dissection in its abdominal part, the aorta may alter impulses to the celiac ganglion, aorticorenal ganglion, and to the following plexuses; renal, superior mesenteric, aortic or intermesenteric, inferior mes-

enteric and superior hypogastric. In addition, the lumbar sympathetics may be involved if dissection proceeds to the origin of the inferior mesenteric artery. With this vast complex of nerves and ganglia in close proximity to the abdominal aorta, changes in its caliber by a dissecting aneurysm readily lead to abdominal pain often referable to the bowel.

Summary

1. Four cases of dissecting aneurysm of the aorta are presented.

2. Three of the aneurysms were of the abdominal aorta and were associated with abdominal pain referable to the bowel both in the initial phases and throughout much of the clinical course.

3. One case of dissecting aneurysm of the thoracic aorta initially had dissection most extensively in the abdominal part. The pain in large measure then followed the course seen in the primary dissections of the abdominal aorta.

4. In the cases presented there was an interval of one to five days after the onset of symptoms until the final fatal outward rupture of the dissecting aneurysm.

5. Roentgenologic diagnosis was conclusive for dissecting aneurysm in fifty percent of the cases.

6. With the rapid evolution of vascular surgery, especially the use of preserved aortic homografts, it is justifiable to be optimistic about future surgical management of dissecting aneurysm of the aorta.

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Ulcerative Colitis Study

The International Academy of Proctology, in cooperation with the newly formed Intestinal Research Institute, has initiated a questionnaire study of attitudes and opinions with regard to etiology, pathogenesis and therapy of ulcerative colitis. This questionnaire has been forwarded to some of the outstanding authorities on the disease in the United States.

The questionnaire form is reprinted below. If you wish to express your personal evaluations on these questions, please complete the form, and return it to the attention of the editor.

The information obtained in this fashion will be carefully collated and published in The American Journal of Proctology.

Ulcerative Colitis Questionnaire

Please feel free to comment far beyond the "Yes - No" type of reply. There can be no Yes and No answers for many of thees questions, and elaboration on a separate sheet of paper, indicating the corresponding number of the question being answered, may be required.

Etiology

1. Ulcerative colitis is a disease of *unknown* etiology. Yes..... No.....
2. The etiology of ulcerative colitis is basically one of stress. (psychogenic) Yes..... No.....
3. The etiology of ulcerative colitis is bacterial Yes..... No.....

   A sequel of acute bacIliary dysentery .....Yes..... No.....

   Bargen's diplostreptococcus .....Yes..... No.....

   Bact. necrophorum .....Yes..... No .....

   Streptococcus mitis .....Yes..... No.....

   B. Morgani .....Yes..... No.....

   Other bacteria (Please name, together with references or supporting opinions and literature.) ....

   .....

   .....

   .....

4. The etiology of ulcerative colitis is protozoal Yes.....No.....

5. Ulcerative colitis is caused by a fungus—
   fungus geotrichum Yes.....No.....
   Monilia albicans Yes.....No.....

6. Ulcerative colitis is caused by a virus Yes.....No.....

7. Ulcerative colitis is due to allergy Yes.....No.....

8. Ulcerative colitis is due to deficiency states Yes.....No.....

9. Ulcerative colitis is due to a metabolic disturbance Yes.....No.....

10. the etiology of ulcerative colitis, in my opinion, is as follows:

    .....

    .....

    .....

    (Use additional paper, as required, to indicate your opinion, and supporting evidence.)

Treatment of Chronic Ulcerative Colitis

Diet

1. The diet should be unrestricted Yes.....No.....

2. The diet should be bland Yes.....No.....

3. The patient may use a coarse diet Yes.....No.....

4. Diet should be high protein Yes.....No.....

5. Diet should be chiefly protein, with little or no carbohydrates Yes.....No.....

6. The major features of the diet I recommend are as follows:

   .....

   .....

   .....

Irrigations and Local Applications

1. Irrigations and local application are valuable. Yes.....No.....

2. Irrigations and local applications are useless. Yes.....No.....

3. Irrigations and local applications have very limited use. Yes.....No.....

4. Irrigations and local applications have the following indications:

.....
.....
.....

Vaccine Therapy

1. Vaccine therapy is very effective Yes.....No.....
2. Vaccine therapy is useless Yes.....No.....
3. Vaccine therapy is of limited use Yes.....No.....
4. Vaccine therapy has the following indications:

   .....
   .....
   .....
   .....

5. The vaccine recommended is autogenous Yes.....No.....
6. The vaccine recommended is stock Yes.....No.....
   (Name the vaccine Indicated) .....
7. The autogenous dysentery, combined with secondary invaders, vaccine of Felsen is of value Yes.....No.....
8. Bargen's vaccine is of value Yes.....No.....
9. The Besredka type of antivirus is of value in Ulcerative Colitis Yes.....No.....
   (Indicate extent of value in your opinion).

   .....
   .....
   .....
   .....

10. General comments on vaccine therapy

    .....
    .....
    .....
    .....

Antibiotic and Sulfonamide Therapy

1. Antibiotic Therapy is of value in ulcerative colitis Yes.....No.....
   List the antibiotics of choice, in their order of preference: (Please indicate average dosage of each)

   ....
   ....
   ....

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2. Sulfonamide Therapy is of value in ulcerative colitis Yes.....No.....
List the sulfonamides of choice, in their order of preference: (Please indicate average dosage of each)

....

....

....

Transfusions

1. Small repeated transfusions are valuable Yes.....No.....
2. A single large transfusion is more valuable Yes.....No.....
3. Lyophile pooled plasma is of particular value Yes.....No.....
4. Immunized donor blood is of particular value Yes.....No.....
5. Antidysentery serum is of value Yes.....No.....
6. Antitoxic B. Coli serum is of value Yes.....No.....

Control of Diarrhea

1. The following drugs or prescriptions are recommended to control diarrhea in chronic ulcerative colitis:

....

.....

.....

.....

2. Opiates should rarely be used in chronic ulcerative colitis Yes.....No.....

Surgical Treatment of Chronic Ulcerative Colitis

1. Early surgery is indicated before the patient is completely debilitated Yes.....No.....
2. Surgery should be reserved only for complications Yes.....No.....
3. Surgery should be used only after medical therapy has failed, unless there are complications. Yes.....No.....
4. The operation of choice is as follows:

.....

.....

.....

.....

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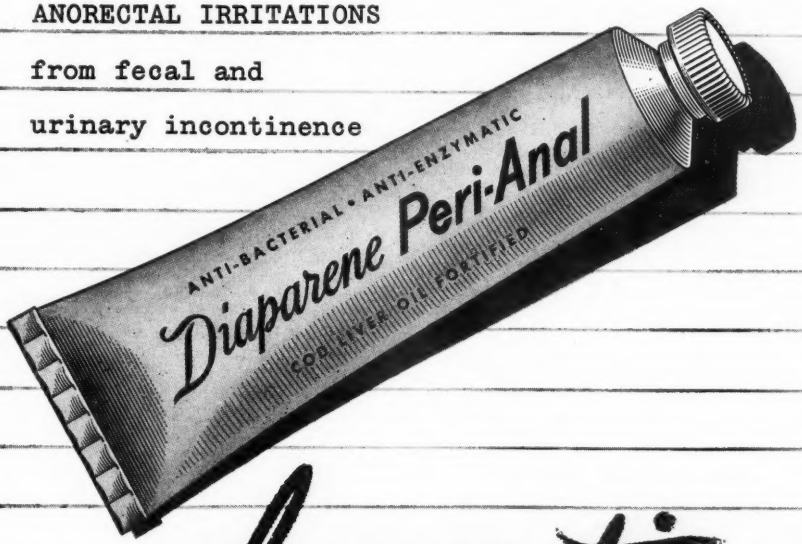
urinary incontinence



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BOOK REVIEWS FOR PROCTOLOGISTS

RECENT ADVANCES IN ANAESTHESIA AND ANALGESIA by C. Langton Hewer, M.B., B.S. (Lond), M.R.C.P. (Lond)., F.F.A.R.C.S. Senior Anaesthetist, St. Bartholomew's Hospital, St. Andrew's Hospital, Dollis Hill Consultant Anaesthetist, The Luton & Dunstable Hospital, Mid-Herts, West-Herts & Harpenden Hospitals. Formerly Member of the Board of Faculty of Anaesthetists. Examiner in Anaesthesia to the Royal College of Physicians of London & to the Royal College of Surgeons of England. Senior Anaesthetist to the Queen's Hospital for Children, Anaesthetist to the Brompton Chest Hospital and Anaesthetic Specialist, R.A.M.C. 440 pages, 169 illustrations, The Blakiston Company, New York. Price $6.50.

The seventh edition of this excellent text offers much rewritten and updated material. There are also fifty-two new figures.

The work continues to be completely practical and should be in the library of every anaesthetist.

The newer material on induced hypotension with the object of minimizing blood loss during operation is included. This reviewer is not enthusiastic about the technique.

The proctologist will find interesting material on caudal block. It is particularly worthy of note that in about 5% of 1,000 post mortem examinations of male and female sacral canals the antero-posterior diameter of the canal was two milimeters or less, making the introduction of a 19 gauge needle virtually impossible.

There is an excellent section on spinal anaesthesia. The newer aqueous anaesthetics are also mentioned, including Xylocaine. The oil anaesthestic, Proctocaine, is also evaluated. This will be of particular interest to the proctologist.

The book is well written and exceptionally well illustrated, and is recommended to all physicians interested in anaesthesia, and-of course, to all anaesthetists.

MODERN CONCEPTS OF COMMUNICABLE DISEASE by Morris Greenberg, M.D., M.S.P.H, Director, Bureau of Preventable Diseases, New York City Department of Health; Assistant Professor of Epidermiology, Columbia University; Attending Pediatrician, Beth David Hospital, New York City and Anna V. Matz, R.N., M.A., Public Health Nursing Consultant to Communicable Diseases, New York City Department of Health; Lecturer in Communicable Diseases, Willard Parker Hospital, New York City Department of Hospitals. 553 pages. Illustrations. G. P. Putnam's Sons, New York.

This excellent reference work will be useful to practicing physicians as well as to medical and nursing students. The first section of the book emphasizes community responsibility for the improvement of health services, and outlines a program for a health department, hospital, doctor, nurse, social worker and patient.

The second section discusses each communicable disease, with particular emphasis on nursing problems. Thus, the work reflects throughout the combined authorship of physician and nurse.

The text is authoritative, and should be useful to all physicians interested in communicable diseases.

HYPNOSIS IN MODERN MEDICINE by Jerome M. Schneck, M.D., Clinical Associate in Psychiatry, College of Medicine, State University of New York, Psychiatric Consultant, Westchester County Department of Health (N.Y.) Founder and President, The Society for Clinical and Experimental Hypnosis. Pages 323. Charles C. Thomas, Springfield, Illinois. Price $7.50.

Applications of hypnosis outside psychiatry and psychology have been few. However, this need not be so. Interest in hypnosis, (suggestion and autosuggestion), is increasing.

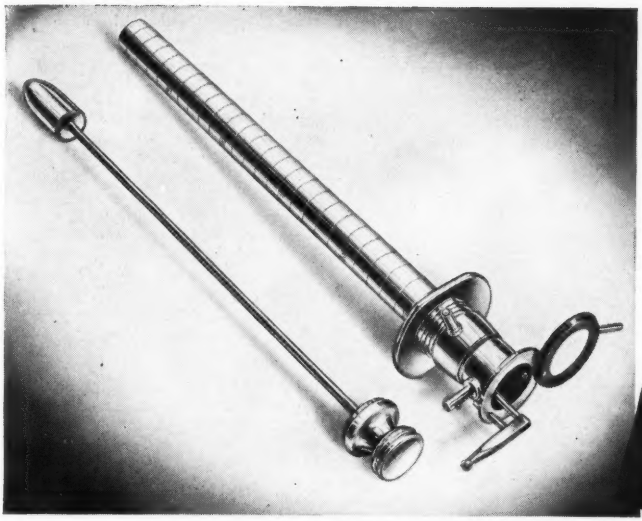
To this reviewer's knowledge, this text is different insofar as applications of hypnosis in the various medical specialties is presented by specialists who have made these applications in their own practices.

It is obvious, therefore, that there would be some differences of opinion in these presentations. However, there is considerable advantage to individualized and specialized coverage of this nature.

The gastroenterologist will be especially interested in the section on Psychogenic Gastrointestinal Reaction. The general and specialty surgeon will be interested in the chapter on Hypnosis and Surgery. All physicians will want to read the final two chapters on the Physiologic Aspects of Hypnosis and Instruction in Hypnosis.

The author of the section on Instruction in Hypnosis, William T. Heron, has written an

—Concluded on page 334



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*"An improved sigmoidoscope for operative work," Alfred L. Solow, M.D., Boston, Mass., American Journal of Surgery, Vol. 89, March 1955.

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—Concluded from page 332

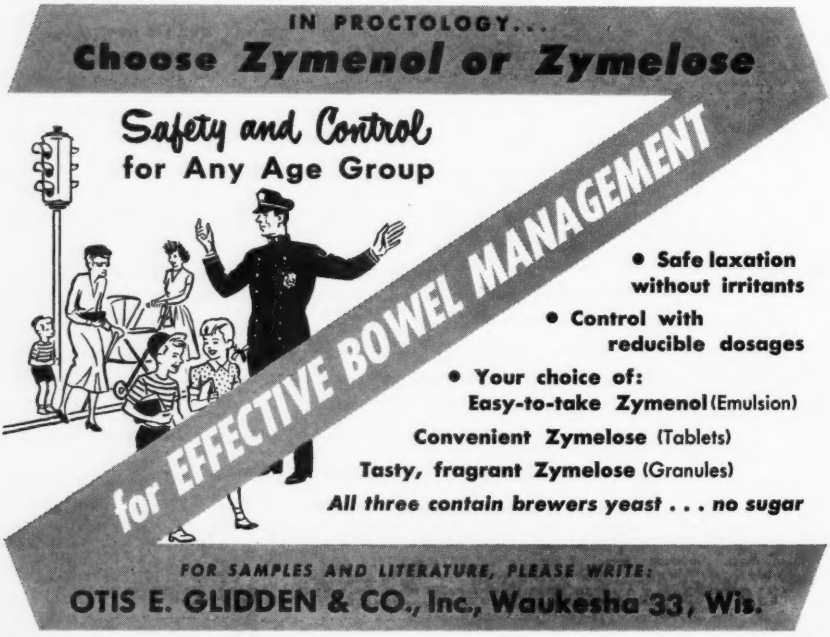
excellent little volume which deserves mention, *Clinical Applications of Suggestions and Hypnosis.*

ATLAS OF OPERATIVE TECHNIC ANUS RECTUM AND COLON by Harry E. Bacon, B.S., M.D., ScD., F.A.C.S., F.R.S.M., F.I.C.S., F.A.P.S., Professor and Head of Department of Proctology, Temple University Medical School. Honorary Fellow: Royal Society Medicine (England), Bordeaux and Ambroise Pare Surgical (France), Madrid and Barcelona Surgical (Spain), Piedmontese Surgical (Italy), Venezuelan Surgical, Peruvian Surgical, Argentinian Surgical and Proctologic, Curitiba Surgical, Chilean Surgical, Brazilian Proctologic, and Dallas Southern Clinical Societies; Detroit Academy of Surgery. Diplomate, American Board of Surgery; Member, American Board of Proctology and Stuart T. Ross, A.B., M.D., F.A.C.S., F.I.C.S., F.A.P.S., Attending Proctologist, Nassau Hospital, Mineloa, New York, and Mercy Hospital, Rockville Center, New York; Assistant Attending Surgeon in Proctology, Meadowbrook Hospital, Hempstead, New York; Formerly Assistant Visiting Surgeon, Kings County Hospital, Brooklyn, New York, and Lecturer in Proctology, Polyclinic Medical School and Hospital, New York City. Secretary, American Proctologic Society; Diplomate and Member, American Board of Proctology. Miembro Correspondiente extrajero Sociedad Proctologia de Argentina; Honorary Fellow, Brazilian Proctologic Society. 403 illustrations, 301 pages. Price $13.50. C. V. Mosby Co., St. Louis, 1954.

This atlas is very well illustrated, and should be a useful addition to the library of the proctologist. There are excellent sections on both anorectal and colon surgery. The material, of course, represents selected procedures employed by the authors.

Thus, there are omissions. For example, the only operation described for the relief of pruritus ani is the clover leaf procedure.

This is a very minor defect, and—in general—the text is sufficiently complete for its purpose.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